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ABSTRACT

The contents of this 1974-1975 Elementary Secondary Education Act Title I Evaluation Report are organized into five sections. Section one is based on data obtained from four-year-old children who participated in the Hilltop Home Intervention Program during the 1974-1975 school year. Secondary school students serviced by the Taylor Children's Home, a program examined in section two, are identified by their inability to function in a regular public school setting. Title I supports one classroom teacher at the Home. The global objective of the Kindergarten Follow Upward program was to service "educationally disadvantaged children" so that they would show normal developmental growth in cognitive and psychomotor skills needed for success in kindergarten. The purpose of the Title I Linguistic Program at Janes School was to raise the reading achievement levels of Latino background children in grades one to four who are below the District's thirtieth percentile on the Metropolitan Achievement Test and/or are recommended for the program by classroom teachers. The Diagnostic-Prescriptive Reading Program operated in nine elementary schools, including six public and three nonpublic schools. It serviced approximately 600 children in grades one through six. (Author/JM)

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Department of
Research and Development

Division of
Instructional Services

Unified School District No. 1
of Racine County

TITLE I

EVALUATION REPORT

E.S.E.A. - TITLE I

COOPERATIVE PROJECT #50-103

(FY 1975)

UD016658

Presented to the Curriculum Committee of the Board of Education
March 15, 1976

UD016658

TITLE I EVALUATION REPORT

1975

Department of Research & Development
Division of Instructional Services
Unified School District No. 1
Racine, Wisconsin

March, 1976

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HILLTOP PRESCHOOL PROGRAM

5

EVALUATION OF THE FOUR YEAR OLDS FROM THE HILLTOP HOME INTERVENTION PROGRAM 1974-1975

Introduction

This section of the 1974-1975 Title I Evaluation Report is based on data obtained from four-year-old children who participated in the Hilltop Home Intervention Program during the 1974-1975 school year. The children were tested at the Hilltop Center during their regularly scheduled center classes. The children attended classes once a week for two hour sessions. In addition, a weekly visit was scheduled to each home.

The evaluation of the Hilltop Home Intervention Program is composed of three distinct parts which are as follows:

Part I - Hypothesis Testing
Part II - Item Analysis-Standardized Instruments
Part III- Item Analysis-Criterion-Referenced (Locally Developed) Instruments

The conclusions and recommendations, based on the data from the three parts listed above, are found on pages 38-39 of this report.

PART I-HYPOTHESIS TESTING

HYPOTHESIS ONE

Statement of Hypothesis

Four-year-old children who have participated in the Home Intervention Preschool Program for the 1974-1975 school year will exhibit norm stabilization in the ability to integrate visual perception and motor ability as measured by the Beery Developmental Test of Visual-Motor Integration.

Presentation of Data

TABLE I

DEVELOPMENTAL TEST OF VISUAL-MOTOR INTEGRATION
MEAN PRE AND POST SCORES EXPRESSED AS MONTHS

Pretest	Post Test	Actual $\bar{X}$ Gain	Expected $\bar{X}$ Gain	t Value
$\bar{X}$ = 44.16	$\bar{X}$ = 51.57	7.41	6.60	0.90
s = 11.19	s = 8.92			
n = 74	n = 74			
Age = 52.71	Age = 59.31			

*Indicates t value is significant at .05 level or beyond.

Interpretation of Results

The Beery Developmental Test of Visual-Motor Integration was administered to seventy-four four-year-olds from the Home Intervention Program in October of 1974 and again in May of 1975, a six-and six-tenths' month span in time.

Results of these testings appear in Table I. Scores record the level of development in terms of months. An actual gain of 7.41 months for the children occurred during the six-and six-tenths' months between testings. When this actual gain was compared to the expected gain, no significant difference was found; that is, their growth rate was not significantly different than normal.

At the time of fall testing, the mean age of the children was 52.71 months. The group developmental level was below their expected age level by more than nine months. The age at the time of post testing was 59.31 months for the children. The group was performing below developmental level by nearly eight months.

HYPOTHESIS TWO

Statement of Hypothesis

Four-year-old children who have participated in the Home Intervention Preschool Program during the 1974-1975 school year will exhibit norm stabilization in skills regarded as necessary for success in school as measured by the Caldwell Preschool Inventory.

Presentation of Data

TABLE II

CALDWELL PRESCHOOL INVENTORY
MEAN PRE AND POST TEST SCORES EXPRESSED AS T SCORES

Pretest	Post Test	Actual $\bar{X}$ Gain	Expected $\bar{X}$ Gain	t Value
$\bar{X}$ = 50.70	$\bar{X}$ = 57.35	6.65	0.00	6.20*
s = 9.88	s = 9.54			
n = 69	n = 69			

*Indicates t value is significant at .05 level or beyond.

Interpretation of Results

Sixty-nine four-year-old children were administered the Caldwell Preschool Inventory on a pre and post test basis. These results, expressed as T scores, are presented in Table II. To obtain T scores it was necessary to convert raw scores to national percentile ranks. National percentile rank is based on the age of the child at the time of testing. With increased age a higher raw score is necessary to maintain the same percentile rank. Based on the normal curve these percentile ranks were changed to T scores. A T distribution has a mean of 50 and a standard deviation of 10. A group indicates normal growth by maintaining the same T score.

When the hypothesis was tested, a significant difference was found from pre to post test. The pretest mean T score of the four-year-olds was 50.70 and the post test mean score was 57.35. This means that in comparison to the national standardization sample of the Caldwell, the children made greater than normal growth and thus improved their position. The post test T value is .74 standard deviations above the expected mean of 50 and indicates a rank at the 77th percentile level compared to the norming sample.

HYPOTHESIS THREE

Statement of Hypothesis

Four-year-old children who have participated in the Home Intervention Preschool Program for the 1974-1975 school year will exhibit norm stabilization in their discrimination skills when measured on the non-verbal Columbia Mental Maturity Scale.

Presentation of Data

TABLE III

COLUMBIA MENTAL MATURITY SCALE
MEAN PRE AND POST TEST SCORES

Pretest	Post Test	Actual $\bar{X}$ Gain	Expected $\bar{X}$ Gain	t Value
$\bar{X}$ = 89.45	$\bar{X}$ = 93.59	4.14	0.00	2.98*
s = 11.12	s = 9.89			
n = 69	n = 69			

*Indicates t value is significant at .05 level or beyond.

Interpretation of Results

Sixty-nine four-year-old children who participated in the Home Intervention aspect of the Hilltop Preschool Program were administered the Columbia Mental Maturity Scale on a pre and post basis. This is a non-verbal measure composed entirely of discrimination skills. The task of the child is to select from the series of drawings the one which is different from, or unrelated to, the others in the series.

Each score is computed by changing the raw score to a standard score based on the age of the child. Increases in age require increases in raw scores to maintain the same standard scores. Normal performance would be indicated by maintaining the same mean standard score. The distribution has a mean of 100 and a standard deviation of 16. Results in Table III indicate that the group of children maintained their positions -- standard scores have made no significant change from pre to post testing.

When the hypothesis was tested, a significant increase was observed. This indicates greater than normal growth in the discrimination skills of the children. The post test is .40 standard deviations below the expected mean of 100 and indicates a rank at the 34th percentile level compared to the norming sample. Based on this data, the group of Home Intervention children ranks low on discrimination skills, but have been able to improve their relative level during the time they were involved in the program.

HYPOTHESIS FOUR

Statement of Hypothesis

Four-year-old children who have participated in the Home Intervention Preschool Program for the 1974-1975 school year will exhibit a statistically significantly higher level of mastery of concepts considered necessary for achievement in the first years of school as measured by the Boehm Test of Basic Concepts.

TABLE IV

BOEHM TEST OF BASIC CONCEPTS
MEAN PRE AND POST TEST SCORES
REPORTED AS RAW SCORES
BY THREE DIFFERENT GROUPINGS OF ITEMS

Description of Items	Pretest	Post Test	t Value
25 Items Form A, Booklet I	$\bar{X}$ = 14.77 s = 4.36 n = 74	$\bar{X}$ = 18.14 s = 3.59 n = 74	7.68*
25 Items Form A Selected Items From Booklets I and II (Identical to Kindergarten Screening Battery)	$\bar{X}$ = 11.24 s = 2.53 n = 74	$\bar{X}$ = 13.42 s = 2.90 n = 74	5.99*
Entire 39 Items Obtained by Combining all Items Above	$\bar{X}$ = 19.03 s = 4.83 n = 74	$\bar{X}$ = 23.03 s = 4.99 n = 74	6.95*

*Indicates t value significant at .05 level or beyond.

Interpretation of Results

The Boehm Test of Basic Concepts was administered on a pre and post test basis to seventy-four students. This test does not have norms for preschool so testing for norm stabilization was not possible. The pretest mean was compared to the post test mean for statistical significance. Three groupings of items within the test are reported.

The testing of the hypothesis (entire thirty-nine items) indicated significantly higher performance on the post test when compared to the pre-test. This means that, on the average, each child knew four more of the measured concepts at the end of the year than he/she knew at the beginning of the year.

HYPOTHESIS FIVE

Statement of Hypothesis

Four-year-old children who have participated in the Home Intervention Preschool Program for the 1974-1975 school year will exhibit a statistically significantly higher perceptual developmental level as measured by the Draw-A-Man Test.

Presentation of Data

TABLE V

DRAW-A-MAN TEST
MEAN PRE AND POST TEST RAW SCORES

Pretest	Post Test	t Value
$\bar{X}$ = 4.51	$\bar{X}$ = 6.04	3.80*
s = 2.76	s = 2.77	
n = 74	n = 74	

*Indicates t value significant at .05 level or beyond.

Interpretation of Results

Seventy-four four-year-old children were administered the Draw-A-Man Test on a pre and post basis. No normative data was available for comparison, so the mean post test score was compared to the pretest score for statistical significance.

The post test score was significantly higher than the pretest score indicating a higher perceptual developmental level as measured by the Draw-A-Man Test.

HYPOTHESIS SIX

Statement of Hypothesis

Four-year-old children who have participated in the Home Intervention Preschool Program during the 1974-1975 school year will exhibit a statistically significantly higher level of vocabulary development as measured by the Peabody Picture Vocabulary Test.

Presentation of Data

TABLE VI

PEABODY PICTURE VOCABULARY
MEAN PRE AND POST TEST RAW SCORES

Pretest	Post Test	t Value
$\bar{X}$ = 32.05	$\bar{X}$ = 42.33	14.09*
s = 9.53	s = 9.21	
n = 76	n = 76	

*Indicates t value significant at .05 level or beyond.

Interpretation of Results

The Peabody Picture Vocabulary Test was administered on a pre and post basis to seventy-six four-year-old children. The post test raw score was compared to the pretest raw score. Results indicate that the post test score was significantly higher than the pretest score with an average improvement of ten words.

PART II-ITEM ANALYSIS

Standardized Instruments

Data reported in Part I of Section I are in the form of mean scores - statistically analyzed by t-tests. In this part, three of the instruments are reported item by item. A chi-square test of significance has been performed on each item. Significant chi-square values indicate a statistically significant change in the number of students correctly answering the item from pretest to post test. This analysis is particularly valuable in determining entering levels of proficiency, assessing skill development in relation to program emphasis, and setting priorities for program emphasis.

TABLE VII

BOEHM TEST OF BASIC CONCEPTS-FORM A
ALL ITEMS OF LEVEL I & SELECTED ITEMS OF LEVEL II
ITEM ANALYSIS

Item Number	Concept n=75	Pretest No. Correct	Post Test No. Correct	Chi-Square Value
1	top	55	69	7.86*
2	through	53	68	8.38*
3	away	33	53	9.84*
4	next	43	59	6.89*
5	inside	43	71	26.64*
6	some	42	56	4.97*
7	middle	40	57	7.47*
8	few	36	34	0.03
9	farthest	41	47	0.69
10	around	62	70	3.09
11	over	53	53	1.08
12	widest	31	42	2.67
13	most	56	58	0.04
14	between	36	49	3.91*
15	whole	35	55	10.03*
16	nearest	63	73	6.38*
17	second	20	19	0.00
18	corner	44	53	1.87
19	several	62	59	0.17
20	behind	39	53	4.75*
21	row	33	52	8.80*
22	different	40	46	0.68

Table VII - Boehm Test of Basic Concepts-Form A (continued)

Item Number	Concept n=75	Pretest No. Correct	Post Test No. Correct	Chi-Square Value
23	after	38	36	0.03
24	most	56	62	0.99
25	half	39	48	1.75
26	center	50	40	2.25
28	at the side	18	42	14.69*
31	shapes alike	14	32	6.12*
35	matches	45	40	0.43
38	over right end	32	42	2.16
40	zero	2	17	11.81*
43	separated	30	32	0.03
44	on the left	27	21	0.77
45	pair	32	24	1.40
46	skip a box	4	6	0.11
47	equal numbers	11	8	0.24
48	in order (large to small)	25	24	0.00
49	third	11	12	0.00
50	least	14	22	1.79

*Indicates chi-square value is significant at .05 level or beyond.

Thirty-nine items of the Boehm Test of Basic Concepts were administered on a pre-post test basis. Fifteen of these items have chi-square values which are significant, indicating that the number of children responding correctly on the post test is significantly greater than the number of children responding correctly on the pretest.

TABLE VIII

CALDWELL PRESCHOOL INVENTORY
ITEM ANALYSIS

Item Number	Concept n=69	Pretest No. Correct	Post Test No. Correct	Chi-Square Value
1	What is your first name?	66	67	0.00
2	How old are you?	51	65	9.14*
3	What is your last name?	48	41	1.14
4	Show me your shoulder.	38	52	5.40*
5	Show me your heel.	17	38	12.09*
6	What's this? (finger)	47	54	1.33
7	What's this? (knee)	36	49	4.41*
8	What's this? (elbow)	30	43	4.19*
9	Raise your hand.	64	65	0.00
10	Now jump.	61	69	6.50*
11	Say "hello" very loudly.	52	66	9.88*
12	Wiggle.	34	54	11.32*
13	Put three cars in the big box.	25	54	23.21*
14	Put the red car on the black box.	36	54	9.23*
15	Put the yellow car on the little box.	29	40	2.90
16	Put the blue car under the green box.	21	38	7.58*
17	Put two cars behind the box in the middle.	16	29	4.75*
18	Give everything to me.	44	44	0.03
19	If you were sick, who would you go to?	44	44	0.03
20	If you wanted to find a boat, where would you look?	24	38	4.95*
21	If you wanted to buy some gas, where would you go?	38	54	7.34*
22	When do we eat breakfast?	15	41	18.78*
23	If you wanted to read something, what would you do?	25	48	14.08*

Table VIII - Caldwell Preschool Inventory-Item Analysis (continued)

Item Number	Concept n=69	Pretest No. Correct	Post Test No. Correct	Chi-Square Value
24	If you wanted to find a lion, where would you look?	15	49	31.73*
25	What does a mother do?	43	48	0.52
26	What does a dentist do?	33	48	5.86*
27	What does a teacher do?	29	27	0.03
28	Which way does a waterfall go?	20	26	0.82
29	Which way does a phonograph record go?	38	38	0.03
30	Which way does a ferris wheel go?	14	22	1.84
31	How many eyes do you have?	59	63	0.64
32	Let's hear you count out loud.	53	62	3.34
33	How many hands do you have?	39	40	0.00
34	How many wheels does a bicycle have?	41	44	0.12
35	How many wheels does a car have?	18	29	3.23
36	How many wheels does a tricycle have?	19	29	2.59
37	How many corners does this sheet of paper have?	7	29	16.57*
38	How many toes do you have?	5	8	0.34
39	Which is bigger, a tree or a flower?	50	57	1.12
40	Which is slower, a car or a bicycle?	37	39	0.03
41	Which is heavier, a brick or a shoe?	44	57	5.32*
42	Point to the middle one.	30	51	11.96*
43	Point to the first one.	21	37	6.69*
44	Point to the last one.	12	19	1.50
45	Point to the second one.	8	16	2.47
46	Which of these two groups has more checkers in it? (2 and 8)	50	57	1.50
47	Which of these two groups has less checkers in it? (4 and 6)	29	52	14.47*

Table VIII - Caldwell Preschool Inventory-Item Analysis (continued)

Item Number	Concept n=69	Pretest No. Correct	Post Test No. Correct	Chi-Square Value
48	Which has more checkers in it? (five and five)	6	8	0.08
49	Point to the one that is most like a wheel.	60	63	0.30
50	Point to the one that is most like a stick.	57	62	1.00
51	Point to the one that is most like a tent.	28	46	7.96*
52	Make one like this. (line)	48	62	7.57*
53	Now one like this. (circle)	49	57	1.99
54	And now this one. (square)	20	40	10.64*
55	Make one like this. (triangle)	13	30	8.65*
56	What color is this? (black)	43	62	12.90*
57	What color is this? (red)	41	62	15.31*
58	Which one is the color of night? (black or purple)	30	58	22.86*
59	Color the circle.	51	60	2.95
60	Color the circle yellow.	34	56	14.09*
61	Color the square.	38	52	5.40*
62	Color the square purple.	31	58	21.39*
63	Color the triangle.	42	59	9.45*
64	Color the triangle orange.	41	60	11.96*

*Indicates chi-square value is significant at .05 level or beyond.

TABLE IX

DEVELOPMENTAL TEST OF VISUAL-MOTOR INTEGRATION (ITEMS 1-15)
ITEM ANALYSIS

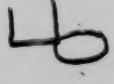
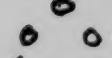
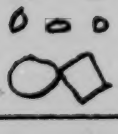
Item Number	Concept n=74	Pretest No. Correct	Post Test No. Correct	Chi-Square Value
1		66	71	1.57
2		51	70	14.68*
3		52	71	15.59*
4		38	56	8.43*
5		18	39	11.41*
6		16	40	15.20*
7		18	23	0.54
8		3	19	12.01*
9		5	15	4.68*
10		4	5	0.00
11		0	3	1.36
12		2	1	0.00
13		0	2	0.51
14		0	0	0.00
15		0	0	0.00

TABLE X

PEABODY PICTURE VOCABULARY TEST
ITEM ANALYSIS

Item Number	Vocabulary Word n=76	Pretest No. Correct	Post Test No. Correct	Chi-Square Value
1	car	76	76	0.00
2	cow	76	76	0.00
3	baby	76	76	0.00
4	girl	76	76	0.00
5	ball	76	76	0.00
6	block	76	76	0.00
7	clown	76	76	0.00
8	key	76	76	0.00
9	can	71	76	3.28
10	chicken	72	76	2.28
11	blowing	63	75	9.51*
12	fan	68	76	6.46*
13	digging	66	75	6.26*
14	skirt	65	74	5.38*
15	catching	63	75	9.51*
16	drum	70	76	4.33*
17	leaf	73	76	1.32
18	tying	45	69	18.56*
19	fence	67	75	5.24*
20	bat	61	75	12.76*
21	bee	62	73	6.62*
22	bush	50	66	8.19*
23	pouring	44	69	19.87*
24	sewing	45	71	22.75*
25	wiener	58	73	10.83*
26	teacher	59	73	9.73*
27	building	35	51	6.02*
28	arrow	49	62	4.81*
29	kangaroo	58	75	15.39*
30	accident	56	72	11.13*
31	nest	26	46	9.52*
32	caboose	21	34	4.10*
33	envelope	47	64	8.55*

Table X - Peabody Picture Vocabulary Test-Item Analysis (continued)

Item Number	Vocabulary Word n=76	Pretest No. Correct	Post Test No. Correct	Chi-Square Value
34	picking	35	49	4.50*
35	beige	11	31	11.88*
36	goggles	24	33	1.80
37	peacock	18	41	13.41*
38	queen	44	62	9.01*
39	coach	13	19	0.99
40	whip	26	41	5.23*
41	net	25	46	10.57*
42	freckle	25	38	3.90*
43	eagle	24	45	10.62*
44	twist	23	42	8.71*
45	shining	24	46	11.68*
46	dial	15	43	20.32*
47	yawning	14	33	9.98*
48	tumble	13	23	2.95
49	signal	14	32	9.01*
50	capsule	10	15	0.77
51	submarine	17	26	2.08
52	thermos	9	13	0.48
53	projector	11	28	8.83*
54	group	4	22	13.41*
55	tackling	11	24	5.34*
56	transportation	1	9	5.25*
57	counter	3	10	3.03
58	ceremony	1	9	5.25*
59	pod	2	14	8.45*
60	bronco	3	13	5.66*
61	directing	4	7	0.39
62	funnel	3	10	3.03
63	delight	1	12	8.41*
64	lecturer	1	4	0.85
65	communication	1	1	0.51
66	archer	2	8	2.68
67	stadium	2	0	0.51
68	excavate	1	2	0.00

PART III-ITEM ANALYSIS

Criterion Referenced (Locally Developed) Instruments

The data reported in Part II were based on the standardized instruments used in the annual evaluation of the program. Data in this section are based on locally developed instruments designed to specifically assess the degree of mastery of skills emphasized in the Hilltop Home Intervention Program.

The curriculum has been divided into five units - each six to seven weeks in length. The Hilltop staff provided a listing of specific objectives for each of the units. Research and Development staff members developed a test for each set of objectives. Each child was individually tested on each unit pre and post. Results of each test situation were returned to the Hilltop staff in the form of a listing of the concepts and the tested level of proficiency for each individual child. In addition, an item by item analysis was returned to the staff after each unit pre and post testing was completed. Results of units one to five, reported item by item, are listed in the following tables.

UNIT ONE
CRITERION-REFERENCED TEST

Item #1 $x^2=0.00$

What is this? (apple)

wrong on pretest right on post test 2	right on pretest right on post test 69
wrong on pretest wrong on post test -	right on pretest wrong on post test 1

Item #2 $x^2=6.67^*$

What is this? (orange)

wrong on pretest right on post test 13	right on pretest right on post test 52
wrong on pretest wrong on post test 5	right on pretest wrong on post test 2

Item #3 $x^2=20.83^*$

What is this? (pumpkin)

wrong on pretest right on post test 28	right on pretest right on post test 35
wrong on pretest wrong on post test 7	right on pretest wrong on post test 2

Item #4 $x^2=15.04^*$

What are these? (grapes)

wrong on pretest right on post test 22	right on pretest right on post test 39
wrong on pretest wrong on post test 9	right on pretest wrong on post test 2

Item #5 $x^2=16.06^*$

What are these? (carrots)

wrong on pretest right on post test 18	right on pretest right on post test 44
wrong on pretest wrong on post test 10	right on pretest wrong on post test -

Item #6 $x^2=20.83^*$

What are these? (potatoes)

wrong on pretest right on post test 28	right on pretest right on post test 21
wrong on pretest wrong on post test 21	right on pretest wrong on post test 2

Item #7 $x^2=10.56^*$

What is your name?

wrong on pretest right on post test 15	right on pretest right on post test 54
wrong on pretest wrong on post test 2	right on pretest wrong on post test 1

Item #8 $x^2=7.84^*$

What is your address?

wrong on pretest right on post test 20	right on pretest right on post test 8
wrong on pretest wrong on post test 39	right on pretest wrong on post test 5

Item #9 $x^2=6.13^*$

How many checkers are in this set? (two)

wrong on pretest right on post test 8	right on pretest right on post test 60
wrong on pretest wrong on post test 4	right on pretest wrong on post test -

Item #10 $x^2=0.04$

How many checkers are in this set now? (five)

wrong on pretest right on post test 12	right on pretest right on post test 21
wrong on pretest wrong on post test 27	right on pretest wrong on post test 12

*Significant at .05 level or beyond.

Unit One - Criterion-Referenced Test (continued)

Item #11 x^2=0.24

How many checkers are in the set now? (eight)

wrong on pretest right on post test 10	right on pretest right on post test 7
wrong on pretest wrong on post test 48	right on pretest wrong on post test 7

Item #12 x^2=0.00

Point to the number "2".

wrong on pretest right on post test 8	right on pretest right on post test 17
wrong on pretest wrong on post test 38	right on pretest wrong on post test 9

Item #13 x^2=3.05

Point to the number "5".

wrong on pretest right on post test 15	right on pretest right on post test 19
wrong on pretest wrong on post test 32	right on pretest wrong on post test 6

Item #14 x^2=5.26*

Point to the number "4".

wrong on pretest right on post test 15	right on pretest right on post test 21
wrong on pretest wrong on post test 32	right on pretest wrong on post test 4

Item #15 x^2=14.09*

What is this? (circle)

wrong on pretest right on post test 21	right on pretest right on post test 41
wrong on pretest wrong on post test 8	right on pretest wrong on post test 2

Item #16 x^2=7.26*

What is this? (square)

wrong on pretest right on post test 21	right on pretest right on post test 14
wrong on pretest wrong on post test 31	right on pretest wrong on post test 6

Item #17 x^2=12.89*

What is this? (triangle)

wrong on pretest right on post test 24	right on pretest right on post test 27
wrong on pretest wrong on post test 17	right on pretest wrong on post test 4

Item #18 x^2=9.60*

What is this? (rectangle)

wrong on pretest right on post test 14	right on pretest right on post test 13
wrong on pretest wrong on post test 44	right on pretest wrong on post test 1

Item #19 x^2=6.86*

What color is this? (red)

wrong on pretest right on post test 17	right on pretest right on post test 37
wrong on pretest wrong on post test 14	right on pretest wrong on post test 4

Item #20 x^2=7.26*

What is this? (yellow card)

wrong on pretest right on post test 21	right on pretest right on post test 23
wrong on pretest wrong on post test 22	right on pretest wrong on post test 6

*Significant at .05 level or beyond.

Item #21 $x^2=3.68$

What color is this? (blue)

wrong on pretest right on post test 16	right on pretest right on post test 27
wrong on pretest wrong on post test 23	right on pretest wrong on post test 6

Item #22 $x^2=4.97$*

What color is this? (green)

wrong on pretest right on post test 21	right on pretest right on post test 23
wrong on pretest wrong on post test 20	right on pretest wrong on post test 8

Item #23 $x^2=6.67$*

What color is this? (orange)

wrong on pretest right on post test 13	right on pretest right on post test 40
wrong on pretest wrong on post test 17	right on pretest wrong on post test 2

Item #24 $x^2=1.25$

What color is this? (purple)

wrong on pretest right on post test 13	right on pretest right on post test 21
wrong on pretest wrong on post test 31	right on pretest wrong on post test 7

*Significant at .05 level or beyond.

Item #25 $x^2=0.74$

Here is a rope on the floor. I want you to start at this end and walk on the rope to the other end.

None or part - Pre Entire - Post 20	Entire - Pre Entire - Post 8
None or part - Pre None or part - Post 30	Entire - Pre None or Part - Post 14

Item #26

Here is a scissors, cut the rectangle out of this page.

Pretest	Post Test	t Value
$\bar{X}=4.82$ $s=4.61$	$\bar{X}=6.63$ $s=4.49$	3.98*

UNIT TWO
CRITERION-REFERENCED TEST

Item #1 $x^2=5.14$*
What is this? (drum)

wrong on pretest right on post test 7	right on pretest right on post test 61
wrong on pretest wrong on post test 4	right on pretest wrong on post test -

Item #2 $x^2=1.33$
What is this? (ball)

wrong on pretest right on post test 3	right on pretest right on post test 69
wrong on pretest wrong on post test -	right on pretest wrong on post test -

Item #3 $x^2=6.13$*
What is this? (clown)

wrong on pretest right on post test 8	right on pretest right on post test 62
wrong on pretest wrong on post test 2	right on pretest wrong on post test -

Item #4 $x^2=2.77$
What is this? (blocks)

wrong on pretest right on post test 10	right on pretest right on post test 57
wrong on pretest wrong on post test 2	right on pretest wrong on post test 3

Item #5 $x^2=0.00$
What is this? (Santa)

wrong on pretest right on post test 1	right on pretest right on post test 69
wrong on pretest wrong on post test -	right on pretest wrong on post test 2

Item #6 $x^2=30.25$*
What is this? (elf)

wrong on pretest right on post test 35	right on pretest right on post test 1
wrong on pretest wrong on post test 35	right on pretest wrong on post test 1

Item #7 $x^2=14.06$*
What is this? (star)

wrong on pretest right on post test 16	right on pretest right on post test 55
wrong on pretest wrong on post test 1	right on pretest wrong on post test -

Item #8 $x^2=12.07$*
What is this? (bell)

wrong on pretest right on post test 14	right on pretest right on post test 56
wrong on pretest wrong on post test 2	right on pretest wrong on post test -

Item #9 $x^2=28.26$*
Which picture is the largest girl?
(largest picture)

wrong on pretest right on post test 33	right on pretest right on post test 33
wrong on pretest wrong on post test 5	right on pretest wrong on post test 1

Item #10 $x^2=4.90$*
Where is the boy sitting?
(in the wagon)

wrong on pretest right on post test 9	right on pretest right on post test 60
wrong on pretest wrong on post test 2	right on pretest wrong on post test 1

*Significant at .05 level or beyond.

Unit Two - Criterion-Referenced Test

Item #11 x^2=18.38*

Is this boy in or out of the wagon? (out of wagon)

wrong on pretest right on post test 23	right on pretest right on post test 45
wrong on pretest wrong on post test 3	right on pretest wrong on post test 1

Item #12 x^2=1.44

Where is the cat? (in front of chair)

wrong on pretest right on post test 16	right on pretest right on post test 4
wrong on pretest wrong on post test 43	right on pretest wrong on post test 9

Item #13 x^2=2.08

Where is the cat? (in back - behind the chair)

wrong on pretest right on post test 9	right on pretest right on post test 58
wrong on pretest wrong on post test 2	right on pretest wrong on post test 3

Item #14 x^2=8.83*

Which girl is the smallest? (smallest girl)

wrong on pretest right on post test 23	right on pretest right on post test 29
wrong on pretest wrong on post test 14	right on pretest wrong on post test 6

Item #15 x^2=6.76*

Which is the middle-size girl? (middle-size girl)

wrong on pretest right on post test 22	right on pretest right on post test 31
wrong on pretest wrong on post test 12	right on pretest wrong on post test 7

Item #16 x^2=48.02*

Let's see if you can finish the rhyme: (Little Jack Horner sat in a _____)

wrong on pretest right on post test 50	right on pretest right on post test 2
wrong on pretest wrong on post test 20	right on pretest wrong on post test -

Item #17a x^2=21.33*

Give me something hard from the bag. (must hand block to tester)

wrong on pretest right on post test 26	right on pretest right on post test 43
wrong on pretest wrong on post test 2	right on pretest wrong on post test 1

Item #17b x^2=28.26*

Give me something soft from the bag. (must hand sponge to tester)

wrong on pretest right on post test 33	right on pretest right on post test 36
wrong on pretest wrong on post test 2	right on pretest wrong on post test 1

Item #18a x^2=47.17*

Give me something rough from the bag. (must hand carpet piece to tester)

wrong on pretest right on post test 12	right on pretest right on post test 15
wrong on pretest wrong on post test 4	right on pretest wrong on post test 1

Item #18b x^2=42.48*

Give me something smooth from the bag. (must hand tagboard to tester)

wrong on pretest right on post test 50	right on pretest right on post test 14
wrong on pretest wrong on post test 6	right on pretest wrong on post test 2

*Significant at .05 level or beyond.

Unit Two - Criterion-Referenced Test

Item #19 $x^2=16.41$*

Walk on tip-toes from here to wall.
(must walk on tip-toes)

wrong on pretest right on post test 21	right on pretest right on post test 47
wrong on pretest wrong on post test 3	right on pretest wrong on post test 1

Item #20 $x^2=8.45$*

Now hop to the table.
(must hop on same foot)

wrong on pretest right on post test 17	right on pretest right on post test 42
wrong on pretest wrong on post test 10	right on pretest wrong on post test 3

*Significant at .05 level or beyond.

UNIT THREE
CRITERION-REFERENCED TEST

Item #1 $x^2=0.00$
What is this? (car)

wrong on pretest right on post test 0	right on pretest right on post test 81
wrong on pretest wrong on post test 0	right on pretest wrong on post test 1

Item #2 $x^2=0.00$
What is this? (truck)

wrong on pretest right on post test 0	right on pretest right on post test 81
wrong on pretest wrong on post test 0	right on pretest wrong on post test 1

Item #3 $x^2=2.29$
What is this? (train)

wrong on pretest right on post test 6	right on pretest right on post test 74
wrong on pretest wrong on post test 1	right on pretest wrong on post test 1

Item #4 $x^2=0.00$
What is this? (boat)

wrong on pretest right on post test 0	right on pretest right on post test 81
wrong on pretest wrong on post test 0	right on pretest wrong on post test 1

Item #5 $x^2=0.00$
What is this? (airplane)

wrong on pretest right on post test 0	right on pretest right on post test 81
wrong on pretest wrong on post test 0	right on pretest wrong on post test 1

Item #6 $x^2=4.17*$
What is this? (bus)

wrong on pretest right on post test 6	right on pretest right on post test 75
wrong on pretest wrong on post test 1	right on pretest wrong on post test 0

Item #7 $x^2=4.97*$
What is this? (mailtruck)

wrong on pretest right on post test 25	right on pretest right on post test 30
wrong on pretest wrong on post test 18	right on pretest wrong on post test 9

Item #8 $x^2=3.13$
What is this? (mailman or postman)

wrong on pretest right on post test 7	right on pretest right on post test 72
wrong on pretest wrong on post test 2	right on pretest wrong on post test 1

Item #9 $x^2=36.21*$
What is this? (heart)

wrong on pretest right on post test 41	right on pretest right on post test 25
wrong on pretest wrong on post test 15	right on pretest wrong on post test 1

Item #10 $x^2=55.02*$
What is this? (crescent)

wrong on pretest right on post test 57	right on pretest right on post test 9
wrong on pretest wrong on post test 16	right on pretest wrong on post test 0

*Significant at .05 level or beyond.

Unit Three - Criterion-Referenced Test

Item #11

Listen. I'm going to start a nursery rhyme: "Two little astronauts sitting on the moon." Now I'm going to say this again and you say it with me and say the whole rhyme to the end. "One named Jack, one named June. Jet away, Jack; Jet away, June! Jet back, Jack; Jet back, June!"

No pretesting
Post results only:
Exact-39; Approx.-30; Wrong-13

Item #12 x^2=3.13

Which is the biggest egg?

wrong on pretest right on post test 7	right on pretest right on post test 74
wrong on pretest wrong on post test 0	right on pretest wrong on post test 1

Item #13 x^2=1.73

Which egg is farthest from you?

wrong on pretest right on post test 23	right on pretest right on post test 29
wrong on pretest wrong on post test 16	right on pretest wrong on post test 14

Item #14 x^2=1.88

Which egg is bigger than this egg?

wrong on pretest right on post test 17	right on pretest right on post test 48
wrong on pretest wrong on post test 8	right on pretest wrong on post test 9

Item #15 x^2=0.57

Pick up one of the eggs and put it near my pencil.

wrong on pretest right on post test 3	right on pretest right on post test 74
wrong on pretest wrong on post test 1	right on pretest wrong on post test 4

*Significant at .05 level or beyond.

Item #16 x^2=12.04*

Does this picture show daytime or nighttime?

wrong on pretest right on post test 4	right on pretest right on post test 47
wrong on pretest wrong on post test 11	right on pretest wrong on post test 20

Item #17a x^2=0.50

Is this wet or dry? (wet)

wrong on pretest right on post test 0	right on pretest right on post test 80
wrong on pretest wrong on post test 0	right on pretest wrong on post test 2

Item #17b x^2=0.00

Is this wet or dry? (dry)

wrong on pretest right on post test 0	right on pretest right on post test 82
wrong on pretest wrong on post test 0	right on pretest wrong on post test 0

Item #17c x^2=1.33

Is this wet or dry? (wet)

wrong on pretest right on post test 0	right on pretest right on post test 79
wrong on pretest wrong on post test 0	right on pretest wrong on post test 3

Item #18 x^2=21.19*

I want you to skip for me.

wrong on pretest right on post test 33	right on pretest right on post test 23
wrong on pretest wrong on post test 22	right on pretest wrong on post test 4

Unit Three - Criterion-Referenced Test

Item #19 $x^2=5.14$*

Now jump for me.

wrong on pretest right on post test 7	right on pretest right on post test 73
wrong on pretest wrong on post test 2	right on pretest wrong on post test 0

Item #20

Fold the paper on the line.

Pretest $\bar{X}=$ 1.51
Post Test $\bar{X}=$ 1.91

$t = 3.07$*

*Significant at .05 level or beyond.

UNIT FOUR
CRITERION-REFERENCED TEST

Item #1 $x^2=3.27$

Point to the bird in the middle.

wrong on pretest right on post test 9	right on pretest right on post test 62
wrong on pretest wrong on post test 8	right on pretest wrong on post test 2

Item #2 $x^2=4.00$*

Show me the edge of this paper.

wrong on pretest right on post test 18	right on pretest right on post test 3
wrong on pretest wrong on post test 53	right on pretest wrong on post test 7

Item #3 $x^2=22.78$*

Which ball is next to the box?

wrong on pretest right on post test 30	right on pretest right on post test 42
wrong on pretest wrong on post test 7	right on pretest wrong on post test 2

Item #4 $x^2=1.56$

What is between the candles? (ball)

wrong on pretest right on post test 11	right on pretest right on post test 61
wrong on pretest wrong on post test 4	right on pretest wrong on post test 5

Item #5 $x^2=17.45$*

Point to the corner of the table.

wrong on pretest right on post test 29	right on pretest right on post test 12
wrong on pretest wrong on post test 36	right on pretest wrong on post test 4

Item #6 $x^2=39.20$*

What is this? (oval)

wrong on pretest right on post test 44	right on pretest right on post test 16
wrong on pretest wrong on post test 20	right on pretest wrong on post test 1

Item #7 $x^2=31.11$*

What is this? (diamond)

wrong on pretest right on post test 41	right on pretest right on post test 24
wrong on pretest wrong on post test 13	right on pretest wrong on post test 3

Item #8 $x^2=3.23$

Which set has fewer lollipops? (set with three lollipops)

wrong on pretest right on post test 21	right on pretest right on post test 24
wrong on pretest wrong on post test 26	right on pretest wrong on post test 10

Item #9 $x^2=0.76$

Which pencil is the shortest?

wrong on pretest right on post test 13	right on pretest right on post test 56
wrong on pretest wrong on post test 4	right on pretest wrong on post test 8

Item #10 $x^2=2.40$

Point to the tallest glass.

wrong on pretest right on post test 11	right on pretest right on post test 60
wrong on pretest wrong on post test 6	right on pretest wrong on post test 4

*Significant at .05 level or beyond.

Unit Four - Criterion-Referenced Test

Item #11 x^2=1.04

Which of these buildings is taller than this building?

wrong on pretest right on post test 15	right on pretest rignt on post test 50
wrong on pretest wrong on post test 7	right on pretest wrong on post test 9

Item #12 x^2=2.70

Which of these jars is shorter than this jar?

wrong on pretest right on post test 20	right on pretest right on post test 37
wrong on pretest wrong on post test 14	right on pretest wrong on post test 10

Item #13 x^2=65.01*

Can you say the rest of the nursery rhyme?

wrong on pretest right on post test 67	right on pretest right on post test 0
wrong on pretest wrong on post test 14	right on pretest wrong on post test 0

Item #14a x^2=43.02*

What is this? (roots)

wrong on pretest right on post test 45	right on pretest right on post test 2
wrong on pretest wrong on post test 34	right on pretest wrong on post test 0

Item #14b x^2=54.15*

What is this? (stem)

wrong on pretest right on post test 59	right on pretest right on post test 5
wrong on pretest wrong on post test 16	right on pretest wrong on post test 1

Item #14c x^2=24.32*

What is this? (leaves)

wrong on pretest right on post test 34	right on pretest right on post test 37
wrong on pretest wrong on post test 7	right on pretest wrong on post test 3

Item #14d x^2=64.02*

What is this? (petals)

wrong on pretest right on post test 66	right on pretest right on post test 2
wrong on pretest wrong on post test 13	right on pretest wrong on post test 0

Item #14e x^2=16.00*

What is this? (seeds)

wrong on pretest right on post test 23	right on pretest right on post test 4
wrong on pretest wrong on post test 52	right on pretest wrong on post test 2

Item #15 x^2=1.56

Which set has more marbles than this one?

wrong on pretest right on post test 5	right on pretest right on post test 62
wrong on pretest wrong on post test 3	right on pretest wrong on post test 11

Item #16 x^2=0.00

Which two eggs make the same sound?

wrong on pretest right on post test 16	right on pretest right on post test 37
wrong on pretest wrong on post test 13	right on pretest wrong on post test 15

*Significant at .05 level or beyond.

Unit Four - Criterion-Referenced Test

Item #17 $x^2=2.25$

Which jar has hot water in it?

wrong on pretest right on post test 0	right on pretest right on post test 77
wrong on pretest wrong on post test 0	right on pretest wrong on post test 4

Item #18

Button the rest of the buttons.

Pre: 80 of 81 buttoned all 3 buttons
Post: 80 of 81 buttoned all 3 buttons

Item #19 $x^2=0.00$

Lace this the rest of the way.

wrong on pretest right on post test 13	right on pretest right on post test 49
wrong on pretest wrong on post test 5	right on pretest wrong on post test 14

UNIT FIVE
CRITERION-REFERENCED TEST

Item #1 $x^2=4.90$*

Walk around the chair.

wrong on pretest right on post test 9	right on pretest right on post test 69
wrong on pretest wrong on post test 0	right on pretest wrong on post test 1

Item #2 $x^2=6.13$*

Throw the bean bag across the table.

wrong on pretest right on post test 8	right on pretest right on post test 71
wrong on pretest wrong on post test 0	right on pretest wrong on post test

Item #3a $x^2=16.45$*

What is this? (goat)

wrong on pretest right on post test 32	right on pretest right on post test 8
wrong on pretest wrong on post test 33	right on pretest wrong on post test 6

Item #3b $x^2=11.13$*

What is this? (cow)

wrong on pretest right on post test 20	right on pretest right on post test 51
wrong on pretest wrong on post test 5	right on pretest wrong on post test 3

Item #3c $x^2=2.25$

What is this? (elephant)

wrong on pretest right on post test 4	right on pretest right on post test 75
wrong on pretest wrong on post test 0	right on pretest wrong on post test

Item #3d $x^2=7.11$*

What is this? (goldfish)

wrong on pretest right on post test 0	right on pretest right on post test 70
wrong on pretest wrong on post test 0	right on pretest wrong on post test 9

Item #3e $x^2=0.00$

What is this? (parakeet)

wrong on pretest right on post test 1	right on pretest right on post test 78
wrong on pretest wrong on post test 0	right on pretest wrong on post test

Item #3f $x^2=7.76$*

What is this? (sheep)

wrong on pretest right on post test 25	right on pretest right on post test 33
wrong on pretest wrong on post test 13	right on pretest wrong on post test 8

Item #3g $x^2=31.03$*

What is this? (giraffe)

wrong on pretest right on post test 33	right on pretest right on post test 31
wrong on pretest wrong on post test 15	right on pretest wrong on post test

Item #3h $x^2=33.23$*

What is this? (leopard)

wrong on pretest right on post test 38	right on pretest right on post test 6
wrong on pretest wrong on post test 34	right on pretest wrong on post test 1

*Significant at .05 level or beyond.

Unit Five - Criterion-Referenced Test

Item #4a $x^2=18.38$*
What kind of animal is this? (farm animal)

wrong on pretest right on post test 30	right on pretest right on post test 35
wrong on pretest wrong on post test 10	right on pretest wrong on post test 4

Item #4b $x^2=0.35$
What kind of animal is this? (farm animal)

wrong on pretest right on post test 15	right on pretest right on post test 46
wrong on pretest wrong on post test 7	right on pretest wrong on post test 11

Item #4c $x^2=7.03$*
What kind of animal is this? (zoo animal)

wrong on pretest right on post test 24	right on pretest right on post test 44
wrong on pretest wrong on post test 3	right on pretest wrong on post test 8

Item #4d $x^2=28.52$*
What is this? (pet) (goldfish)

wrong on pretest right on post test 43	right on pretest right on post test 13
wrong on pretest wrong on post test 18	right on pretest wrong on post test 5

Item #4e $x^2=23.81$*
What is this? (pet) (parakeet)

wrong on pretest right on post test 38	right on pretest right on post test 8
wrong on pretest wrong on post test 28	right on pretest wrong on post test 5

Item #4f $x^2=16.45$*
What kind of animal is this? (farm animal)

wrong on pretest right on post test 32	right on pretest right on post test 30
wrong on pretest wrong on post test 11	right on pretest wrong on post test 6

Item #4g $x^2=5.63$*
What kind of animal is this? (zoo animal)

wrong on pretest right on post test 22	right on pretest right on post test 44
wrong on pretest wrong on post test 5	right on pretest wrong on post test 8

Item #4h $x^2=12.00$*
What kind of animal is this? (zoo animal)

wrong on pretest right on post test 23	right on pretest right on post test 42
wrong on pretest wrong on post test 10	right on pretest wrong on post test 4

Item #5a $x^2=16.41$*
How many checkers are on the table? (3)

wrong on pretest right on post test 21	right on pretest right on post test 47
wrong on pretest wrong on post test 10	right on pretest wrong on post test 1

Item #5b $x^2=10.03$*
How many checkers are here? (2)

wrong on pretest right on post test 28	right on pretest right on post test 40
wrong on pretest wrong on post test 3	right on pretest wrong on post test 8

*Significant at .05 level or beyond.

Unit Five - Criterion-Referenced Test

Item #5c $x^2=14.77^*$

Which number matches the checkers? (4)

wrong on pretest right on post test 32	right on pretest right on post test 34
wrong on pretest wrong on post test 6	right on pretest wrong on post test 7

Item #6a $x^2= 2.78$

What is this? (rectangle)

wrong on pretest right on post test 16	right on pretest right on post test 41
wrong on pretest wrong on post test 15	right on pretest wrong on post test 7

Item #6b $x^2=13.07^*$

What is this? (square)

wrong on pretest right on post test 15	right on pretest right on post test 41
wrong on pretest wrong on post test 23	right on pretest wrong on post test

Item #6c $x^2=6.75^*$

What is this? (diamond)

wrong on pretest right on post test 11	right on pretest right on post test 57
wrong on pretest wrong on post test 10	right on pretest wrong on post test 1

Item #7a $x^2=4.90^*$

What color is this? (red)

wrong on pretest right on post test 9	right on pretest right on post test 65
wrong on pretest wrong on post test 4	right on pretest wrong on post test 1

Item # 7b $x^2=0.00$

What color is this? (blue)

wrong on pretest right on post test 7	right on pretest right on post test 59
wrong on pretest wrong on post test 7	right on pretest wrong on post test 6

Item #7c $x^2=0.00$

What color is this? (yellow)

wrong on pretest right on post test 5	right on pretest right on post test 64
wrong on pretest wrong on post test 6	right on pretest wrong on post test 4

Item #7d $x^2=6.75^*$

What color is this? (orange)

wrong on pretest right on post test 11	right on pretest right on post test 64
wrong on pretest wrong on post test 3	right on pretest wrong on post test 1

Item #7e $x^2=4.08^*$

What color is this? (green)

wrong on pretest right on post test 10	right on pretest right on post test 62
wrong on pretest wrong on post test 5	right on pretest wrong on post test 2

Item #7f $x^2=1.89$

What color is this? (purple)

wrong on pretest right on post test 13	right on pretest right on post test 55
wrong on pretest wrong on post test 5	right on pretest wrong on post test 6

*Significant at .05 level or beyond.

Unit Five - Criterion-Referenced Test

Item #7g $x^2=1.07$

What color is this? (black)

wrong on pretest right on post test 10	right on pretest right on post test 63
wrong on pretest wrong on post test 1	right on pretest wrong on post test 5

Item #7h $x^2=5.82$*

What color is this? (brown)

wrong on pretest right on post test 10	right on pretest right on post test 65
wrong on pretest wrong on post test 3	right on pretest wrong on post test 1

Item #7i $x^2=2.08$

What color is this? (white)

wrong on pretest right on post test 9	right on pretest right on post test 63
wrong on pretest wrong on post test 4	right on pretest wrong on post test 3

Item #8a $x^2=2.50$

Give me the long piece of string.

wrong on pretest right on post test 8	right on pretest right on post test 69
wrong on pretest wrong on post test	right on pretest wrong on post test 2

Item #8b $x^2=7.69$*

Give me the fat pencil.

wrong on pretest right on post test 12	right on pretest right on post test 65
wrong on pretest wrong on post test 1	right on pretest wrong on post test 1

Item #8c $x^2=3.13$

Give me the short pencil.

wrong on pretest right on post test 7	right on pretest right on post test 68
wrong on pretest wrong on post test 3	right on pretest wrong on post test 1

Item #9a $x^2=3.45$

Tell me what you do in the morning.

wrong on pretest right on post test 20	right on pretest right on post test 40
wrong on pretest wrong on post test 10	right on pretest wrong on post test 9

Item #9b $x^2=5.36$*

Tell me what you do in the afternoon.

wrong on pretest right on post test 29	right on pretest right on post test 24
wrong on pretest wrong on post test 13	right on pretest wrong on post test 13

Item #9c $x^2=5.04$*

Tell me what you do at night.

wrong on pretest right on post test 18	right on pretest right on post test 43
wrong on pretest wrong on post test 12	right on pretest wrong on post test 6

Item #10 $x^2=39.51$*

Do you know the end of the rhyme? (to "Mary Had a Little Lamb")

wrong on pretest right on post test 47	right on pretest right on post test 4
wrong on pretest wrong on post test 26	right on pretest wrong on post test 2

*Significant at .05 level or beyond.

Unit Five - Criterion-Referenced Test

Item #11 $x^2=0.44$

I want you to catch this ball.

wrong on pretest right on post test 6	right on pretest right on post test 79
wrong on pretest wrong on post test 2	right on pretest wrong on post test 3

Conclusions and Recommendations

Data from this report, combined with data from previous reports, indicate the children who participate in the Hilltop Home Intervention Program do make normal or greater than normal growth in the areas of visual-motor integration, preschool achievement, and discrimination skills during the period of program participation.

Since children are eligible for the Title I program because they have a developmental lag, it would not have been predicted that normal growth would have occurred during the period of program participation if the children had not participated in the program.

Item analyses of both standardized instruments and the (locally developed) criterion referenced instruments have been used by the Hilltop staff. The group analysis of the data has been used extensively in curriculum development and revision. The scope and sequence of activities have been modified and revised to be more sensitive to the levels and needs of the children; inappropriate objectives have been eliminated, there has been a reduction in emphasis of skills already mastered, and the emphasis has been increased on inadequately learned skills and concepts.

The criterion referenced data has been used on an individual basis - from each child's test results a feedback sheet has been compiled. This information on the feedback sheet provides valuable information regarding each child's skill level. In addition, this information has been shared with the home and has been received as a positive tool to aid in the instruction of each child.

The procedure for screening children prior to entry into the program has been improved with the movement to a modified form of the Denver

Developmental Screening Test as the criterion instrument. Further modifications to this procedure must be set up, the problems inherent in testing young children must be dealt with in a more systematic manner when it is discovered that the young child does not respond. The present position is such that the child is automatically admitted to the program. It is recommended that a second attempt to screen the child be completed within two months. (This situation is the extreme exception rather than the rule.) At the same time, a procedure must be developed so that a child may be exited from the program during the year as his/her skill level reaches mastery of the objectives of the program.

Since the primary emphasis of this program is to enable mothers to become more effective educational change agents for their children, more attention should be directed to this area. Strong parent participation is necessary as the present program is described and designed. This participation must be required and greater documentation of this information and of other activities associated with parent participation should become part of future process evaluation.

For it is only by studying the processes which go on within the program that will enable us to sort out those activities and functions which produce positive results for children and those which are non-functional. A major emphasis for next year will be the process evaluation.

TAYLOR CHILDREN'S HOME

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TAYLOR CHILDREN'S HOME

Introduction

Children serviced by this program are identified by their inability to function in a regular public school setting as determined by the staff at Taylor Children's Home. Title I supports one classroom teacher at the Home whose function it is to:

1. Plan, implement, and evaluate the daily instructional program with the other faculty members of the Children's Home staff.
2. Participate in staffing sessions with such specialists as psychologists, social workers, case workers, house parents, and the director.
3. Keep records of students' progress and achievement.
4. Administer the pre-post measures used to document achievement gains.

The teacher receives a great deal of aid via staffing sessions held at the Children's Home. These sessions are used to assess progress, reassign priorities, and plan new strategies.

The specific objective of this program is to significantly increase the reading and mathematics achievement level, greater than the normal (expected) developmental rate, as measured by the Metropolitan Achievement, Wide Range Achievement, and Gates Oral Reading Tests for approximately thirteen children in grades seven through ten. The evaluation of this objective is accomplished through a pre-post administration of the tests mentioned.

Presentation of Data and Interpretation of Results

For each measurement the expected mean gain score was calculated by adding the number of months each child was in the program and dividing the sum by the number of children participating in the program.

To obtain actual gain scores, the pretest score for each child was subtracted from his post test score on each measure. Individual gain scores were then added and the sum divided by the number of participants to derive actual mean gain scores for each measurement.

Table I presents group data and results for each instrument included in the Taylor Children's Home evaluation. The statistical t test was used to compare actual to expected mean gain scores.

TABLE I

COMPARISON OF ACTUAL GAIN TO EXPECTED GAIN
FOR TAYLOR CHILDREN'S HOME PARTICIPANTS
USING GRADE EQUIVALENT SCORES

Test	Pretest $\bar{X}$ G.E.	Post Test $\bar{X}$ G.E.	Expected $\bar{X}$ Gain	Actual $\bar{X}$ Gain	t Value
Gates Oral Reading Test N=13	5.25	6.61	0.46	1.36	5.29*
Wide Range Word Recognition N=13	5.44	6.62	0.46	1.18	5.13*
Metropolitan Achieve. Test Wd. Recognition N=12	5.45	6.58	0.46	1.13	2.16
Metropolitan Achieve. Test Reading N=12	5.77	7.08	0.46	1.31	2.93*
Metropolitan Achieve. Test Math Comp. N=12	5.48	6.68	0.46	1.20	2.64*
Metropolitan Achieve. Test Math Concepts N=12	5.19	6.05	0.46	0.86	2.86*
Metropolitan Achieve. Test Math Problem Solving N=12	5.00	6.09	0.46	1.09	2.17

*Indicates t value is significant at the .05 level or beyond.
G.E. = Grade Equivalent

Conclusions

The 1974-1975 results are consistent with findings from previous years. Taylor Children's Home provides an experience which enables its participants to make significant gains in academic achievement.

On six of seven measurements, actual growth was more than double expected growth for the group; and on five of seven measures actual growth was significantly greater than expected growth.

These gains are more noteworthy in view of participants' slow academic progress prior to attending Taylor Children's Home. This is illustrated by the following example. On the Gates Oral Reading Test students made an average gain of one year and four months in only five months' time. The average grade level of children in the program during the 1974-1975 school year was eighth grade. Taking the pretest mean score on the Gates Test, calculate eight year growth for the group (5.25 - 1.00) and divide by eight (eight years of schooling). The result is average gain per year of schooling prior to attending Taylor Children's Home - five months.

The five month gain per year when compared to the one year-four months' gain made at the Children's Home demonstrates the strong positive effect this program has on student academic achievement.

Similar comparisons can be made on the remaining measures used in the evaluation with like results.

Continuing evaluation of this program is in progress.

KINDERGARTEN FOLLOW UPWARD

KINDERGARTEN FOLLOW UPWARD

Introduction

The Kindergarten Follow Upward program was added as a component of Title I during the 1974-1975 school year. The global objective of the program was to service "educationally disadvantaged" children so that they would show normal developmental growth in cognitive and psychomotor skills needed for success in kindergarten.

The program was implemented in two schools, Lincoln and Winslow. Each school was serviced by one full-time teacher and a full-time aide. Each student met with the teacher or the aide four times per week, for a period of twenty to thirty minutes per day. In addition, either the teacher or the aide visited each home once every other week. Approximately twenty-five students were served by the program at each school. Due to the turnover of students, only thirty-three children participated in the program for the entire year. Test results from these thirty-three students provide the data for the evaluation of this program.

Presentation of Data and Interpretation of Results

HYPOTHESIS ONE

Statement of Hypothesis

Kindergarten children who have participated in the Kindergarten Follow Upward Program for the 1974-1975 school year will exhibit norm stabilization in the ability to integrate visual perception and motor ability as measured by the Beery Developmental Test of Visual-Motor Integration.

Presentation of Data

TABLE I

DEVELOPMENTAL TEST OF VISUAL-MOTOR INTEGRATION
MEAN PRE AND POST SCORES EXPRESSED AS MONTHS

Pretest	Post Test	Actual X Gain	Expected X Gain	t Value
$\bar{X}$ = 47.06	$\bar{X}$ = 63.94	16.88	12.00	3.64*
s = 9.65	s = 8.99			
n = 33	n = 33			

*Indicates t value is significant at .05 level or beyond.

Interpretation of Results

The Beery Developmental Test of Visual-Motor Integration was administered to thirty-three students on a pre-post basis.

The actual time between testings was twelve months. The pretest, part of the preschool screening battery, was administered in May of the year prior to entry into kindergarten. The post test was administered in May of the kindergarten year.

At the time of the pretest the average age was sixty months and at the time of the post test the average age was seventy-two months.

The pretest developmental level of forty-seven months indicated that, as a group, the children were thirteen months behind. During the interval between testings the gain was nearly seventeen months in a span of twelve months. When compared to the hypothesized month for month gain, the findings indicated a significantly accelerated rate of development, rather than only month for month gain.

Since 1974-1975 was the year of implementation, it provides information of a positive nature to give direction for future evaluations.

HYPOTHESIS TWO

Statement of Hypothesis

Kindergarten children who have participated in the Kindergarten Follow Upward Program for the 1974-1975 school year will exhibit norm stabilization in their discrimination skills when measured on the non-verbal Columbia Mental Maturity Scale.

Presentation of Data

TABLE II

COLUMBIA MENTAL MATURITY SCALE
MEAN PRE AND POST TEST SCORES

Pretest	Post Test	Actual $\bar{X}$ Gain	Expected $\bar{X}$ Gain	t Value
$\bar{X}$ = 90.63	$\bar{X}$ = 92.94	2.31	0.00	1.67
s = 9.43	s = 11.74			
n = 33	n = 33			

Interpretation of Results

Thirty-three children who participated in the Kindergarten Follow Upward program were administered the Columbia Mental Maturity Scale on a pre and post basis. This is a non-verbal measure composed entirely of discrimination skills. The task of the child is to select from the series of drawings the one which is different from, or unrelated to, the others in the series.

Each score is computed by changing the raw score to a standard score based on the age of the child. Increases in age require increases in raw scores to maintain the same standard score. Normal performance would be indicated by maintaining the same mean standard score. The distribution has a mean of 100 and a standard deviation of 16. Results in Table II indicate that the group of children maintained their positions - standard scores have made no significant change from pre to post testing.

When the hypothesis was tested, it was accepted. This indicates normal growth in the discrimination skills of the children. The pretest score is 0.59 standard deviations below the norming mean and has a rank of the 28th percentile. The post test score is 0.44 standard deviations below the norming mean and indicates a rank at the 33rd percentile.

HYPOTHESIS THREE

Statement of Hypothesis

Kindergarten children who have participated in the Kindergarten Follow Upward program for the 1974-1975 school year will exhibit a statistically significantly higher level of mastery of concepts considered necessary for achievement in the first years of school as measured by the Boehm Test of Basic Concepts.

Presentation of Data

TABLE III

BOEHM TEST OF BASIC CONCEPTS
MEAN PRE AND POST TEST RAW SCORES
25 SELECTED ITEMS OF FORM A, BOOKLETS I AND II

Pretest	Post Test	t Value
$\bar{X}$ = 11.21	$\bar{X}$ = 15.03	5.46*
s = 2.43	s = 3.64	
n = 33	n = 33	

*Indicates t value is significant at .05 level or beyond.

Interpretation of Results

Thirty-three children who participated in the Kindergarten Follow Upward program were administered twenty-five selected items from the Boehm Test of Basic Concepts on a pre-post basis.

The pretest mean was compared to the post test mean for statistical significance. The testing of the hypothesis indicated a significantly higher level of concept mastery on the post test compared to the pretest.

HYPOTHESIS FOUR

Statement of Hypothesis

Kindergarten children who have participated in the Kindergarten Follow Upward program for the 1974-1975 school year will exhibit a statistically significantly higher perceptual developmental level as measured by the Draw-A-Man Test.

Presentation of Data

TABLE IV

DRAW-A-MAN TEST
MEAN PRE AND POST TEST RAW SCORES

Pretest	Post Test	t Value
$\bar{X} = 4.82$	$\bar{X} = 9.03$	5.24*
$s = 3.50$	$s = 1.55$	
$n = 33$	$n = 33$	

*Indicates t value is significant at .05 level or beyond.

Interpretation of Results

Thirty-three children were administered the Draw-A-Man Test on a pre and post basis. No normative data was available for comparison, so the mean post test score was compared to the pretest score for statistical significance.

The post test score was significantly higher than the pretest score indicating a higher perceptual developmental level as measured by the Draw-A-Man Test.

Conclusions

Data from the 1974-1975 Kindergarten Follow Upward program have provided encouraging results. Testing of the four hypotheses involving visual motor, discrimination, concept formation, and perceptual development indicated positive findings in all cases.

Lack of a control group does raise some questions as to how much growth was program induced and how much normal and accelerated growth occurred due to first year's school experience. Plans for the evaluation of the 1975-1976 school year include a control group of children.

A criterion-referenced testing program was initiated this year similar to the testing program in the Hilltop Home Intervention program (see pages 20-37). Since this testing was in a preliminary form, and served as much of a learning experience to the staff and the Research Department, no data is reported. This area of criterion-referenced testing will become a vital aspect of the 1975-1976 program and will be reported to you at that time.

LINGUISTICS PROGRAM

LINGUISTICS PROGRAM
FEBRUARY-JUNE, 1975

Introduction

In February, 1975 a Title I Linguistics Program began at Janes School. The purpose of the program was to raise the reading achievement levels of Latino background children in grades one to four who are below the District's 30th percentile on the Metropolitan Achievement Test and/or are recommended for the program by classroom teachers. Thirty-five children were enrolled in the program in February. Table I indicates the basis for selection of children for the program.

TABLE I

NUMBER AND PERCENT OF CHILDREN SELECTED FOR LINGUISTICS PROGRAM INDICATING BASIS FOR SELECTION

Basis for Selection	Number	Percent
Below District's 30th Percentile on 1974-1975 Metropolitan Achievement Test-Reading Subtest (Includes 4 Teacher-Recommended)	18	51.4%
Teacher Recommendations (Above 30th Percentile)	6	17.2
No Metropolitan Achievement Test and/or No Recommendation	11	31.4
Total	35	100.0%

The children are removed from the classroom for thirty minutes, three or four times a week, and are administered treatment in reading by a bilingual staff.

Presentation of Data and Interpretation of Results

Both objective and subjective measures were used to determine language dominance. The SRA Test of General Ability-Part I Verbal was administered to the children in February, 1975. This test was selected because 1) it had directions available in Spanish (which were altered slightly by a committee of bilingual Latinos into the local Spanish vernacular) and in English, and 2) the technical manual reports high reliability between the odd items (administered in English) and the even items (administered in Spanish). The instructional staff was also requested to indicate each child's (thirty-five children) language dominance after one month in the program and again in June (thirty-one children). There was agreement between objective and subjective measures on twenty-seven of the thirty-one children (87%) who were pre and post tested and agreement on thirty-one of the thirty-five (89%) who enrolled in February.

Results of the testing are summarized in Table II.

TABLE II

SRA TEST RESULTS-LINGUISTICS PROGRAM
FEBRUARY, 1975

	English Dominant	Bilingual or Spanish Dominant	Total
Number	15	20	35
Percentage	43.0%	57.0%	100.0%

Performance on the task required resulted in such poor performance by two of the four children incorrectly identified, that no determination of language dominance from the test should have been attempted. No children correctly identified performed as poorly. (Establishing a minimum level of performance on the test would result in agreement between test and teacher judgment in thirty-one of thirty-three cases, or 94% of the cases.)

The Boehm Test of Basic Concepts was administered to the thirty-five children in the program in February. The fifty-item test was given totally in English to children who were English dominant (dominance for this test was determined by teacher rating), in Spanish to children who were Spanish dominant, and half (twenty-five items) in Spanish, half in English to those children who were bilingual. Item selection for Spanish-English testing was based on the difficulty and representativeness of concepts measured.

TABLE III

ITEM SELECTION

Boehm Concepts	Spanish	English	Total
Space	12	12	24
Quantity	9	9	18
Time	2	1	3
Miscellaneous	2	3	5
Total	25	25	50
$\bar{X}$% Difficulty*	82.3%	82.5%	82.4%

*Percent difficulty determined from low socio-economic, beginning year, grade 2: Boehm Test of Basic Concepts Technical Manual, Table IV.

TABLE IV

BOEHM TEST OF BASIC CONCEPTS
MEAN RAW SCORES AND NATIONAL PERCENTILES
BY GRADE AND LANGUAGE DOMINANCE
LINGUISTICS PROGRAM-1975

Grade		N	Total Raw Score $\bar{X}$	Spanish Items $\bar{X}$	English Items $\bar{X}$	Percentile $\bar{X}$
1	Total	9	41.2	-	-	73
	Bilingual	3	31.0	12.0	19.0	34
	Spanish	0	-	-	-	-
	English	6	46.3	-	46.3	91
2	Total	10	46.0	-	-	68
	Bilingual	4	45.8	23.5	22.3	65
	Spanish	1	50.0	50.0	-	90
	English	5	46.8	-	46.8	78
3	Total	8	49.3	-	-	95
	Bilingual	2	50.0	25.0	25.0	99
	Spanish	1	48.0	48.0	-	90
	English	5	49.2	-	49.2	95
4	Total	4	49.0	-	-	92
	Bilingual	1	50.0	25.0	25.0	99
	Spanish	1	50.0	50.0	-	99
	English	2	47.5	-	47.5	85

The children performed well on the Basic Concepts Test. Two of the four children for whom there was a discrepancy in objective and subjective language dominance ratings (identified as bilingual by instructional staff, English dominant by SRA Test) performed very poorly on the Spanish items (English raw scores: 20, 12; Spanish raw scores: 7, 4). In grades one and

two the bilingual children did not perform as well as the others. At grades three and four there was mastery of the fifty concepts as measured on the Boehm Test.

The Boehm Test of Basic Concepts was used as a diagnostic measure. An item analysis was given to the resource teacher to assist her in diagnosing and prescribing treatment for the children.

Tables V-VII indicate the performance of the children on the Dolch words. First grade children show statistically significant growth between testings with a mean increase of fifty-seven more words correct at post testing. Third graders show a mean gain of only three words at post testing; however, sixty-seven percent of them had 90% or more words correct on the pretest; one hundred percent had mastered 90% or more on the post test. The performance of four children, two each in grades two and three, was not considered in the pre-post test analysis as it is suspected that pretest results are not valid.

The Woodcock Reading Mastery Test was administered to all children enrolled in the program and was part of the pre-post test design. Children in grade one were only administered the subtests Letter Identification and Word Identification. Tables VIII-X summarize the results of the test.

TABLE V

PRE AND POST DOLCH WORD TEST RESULTS
AVERAGE NUMBER OF WORDS CORRECT AND CONFIDENCE INTERVALS
GRADES 1-4, LINGUISTICS PROGRAM-1975

Grade	N	Pretest $\bar{X}$	Pretest 95% Confidence Interval	Post Test $\bar{X}$	Post Test 95% Confidence Interval
1	9	24.89	13.82- 35.95	81.22	47.14-115.30*
2	8	142.13	97.83-186.42	182.13	158.70-205.55
3	6	215.17	212.33-218.00	218.00	216.48-219.52
4	3	199.00	181.33-216.68	212.33	211.68-212.99

*Indicates significant change at .05 level or beyond.

TABLE VI

AVERAGE INCREASE IN NUMBER OF DOLCH WORDS CORRECT AT POST TESTING
GRADES 1-4, LINGUISTICS PROGRAM-1975

Grade	N	$\bar{X}$ Increase	95% Confidence Interval of $\bar{X}$ Increase
1	9	57.44	26.76-88.13
2	8	40.00	15.58-64.42
3	6	2.83	.78- 4.88
4	3	13.33	-4.06-30.73

TABLE VII

PERCENT MASTERY OF DOLCH WORD LIST FOR PRE AND POST TESTING
GRADES 1-4, LINGUISTICS PROGRAM-1975

	Grade 1 N=9		Grade 2 N=8		Grade 3 N=6		Grade 4 N=3	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Below 10% < 22	(3)33.3%	(1)11.1%	- -	- -	- -	- -	- -	- -
10%-29% 22-65	(5)55.7%	(3)33.3%	- -	- -	- -	- -	- -	- -
30%-49% 66-109	(1)11.1%	(2)22.2%	(4)50.0%	- -	- -	- -	- -	- -
50%-69% 110-153	- -	(2)22.2%	- -	(3)38.0%	- -	- -	- -	- -
70%-89% 154-197	- -	(1)11.1%	(1)13.0%	(1)13.0%	- -	- -	(1)33.0%	- -
90%+ 198+	- -	- -	(3)38.0%	(4)50.0%	(6)100.0%	(6)100.0%	(2)67.0%	(3)100.0%

TABLE VIII

AVERAGE GAIN IN MONTHS (AND CONFIDENCE INTERVALS)
ON THE WOODCOCK SUBTESTS LETTER IDENTIFICATION AND WORD IDENTIFICATION
GRADE 1, LINGUISTICS PROGRAM-1975

Subtest	N	Average Gain (or Loss) in Months	95% Confidence Interval of Gain in Months
Letter Identification	9	-2.78	-4.79 - -0.77
Word Identification	9	2.22	1.31 - 3.13

As Table VIII indicates, the first grade children show a loss of nearly three months in Letter Identification and a gain of two months in Word Identification for the four-month period between tests.

TABLE IX

AVERAGE GAIN IN MONTHS (AND CONFIDENCE INTERVALS)
BETWEEN PRE AND POST TESTINGS ON THE WOODCOCK BY SUBTEST
GRADES 2-4, LINGUISTICS PROGRAM-1975

Subtest	N	Average Gain in Months	95% Confidence Interval of Gain in Months
Letter Identification	22	24.95	11.16 - 38.75
Word Identification	22	.82	-0.74 - 2.37
Word Attack	22	9.77	3.55 - 16.00
Word Comprehension	22	6.73	4.89 - 8.57
Passage Comprehension	22	1.91	0.10 - 3.72
Total Reading	22	4.32	3.35 - 5.29

Children in grades two through four show gains in months greater than the number of months in the program (four months) on three of the five subtests, the greatest gain (nearly twenty-five months) being in Letter Identification. The smallest gain (less than one month) was made in Word Identification, and the gain in Passage Comprehension was slightly less than two months. The average gain in months for the group in Total Reading was four months.

TABLE X

NUMBER AND PERCENT OF CHILDREN
WHO SHOW A GAIN ON SUBTESTS OF WOODCOCK READING MASTERY TEST
GRADES 1-4, LINGUISTICS PROGRAM-1975

		Letter Identification		Word Identification			Word Attack		Word Comprehension		Passage Comprehension		Total Reading	
Grade	N	Gain	No Gain Or Loss	Gain	No Gain Or Loss	N	Gain	No Gain Or Loss	Gain	No Gain Or Loss	Gain	No Gain Or Loss	Gain	No Gain Or Loss
1	9	(2)22.2%	(7)77.7%	(8)88.8%	(1)11.2%		Not Tested		Not Tested		Not Tested		Not Tested	
2	10	(7)10.0%	(3)30.0%	(9)90.0%	(1)10.0%	10	(7)70.0%	(3)30.0%	(9)90.0%	(1)10.0%	(7)70.0%	(3)30.0%	(9)90.0%	(1)10.0%
3	8	(8)100.0%	-	(4)50.0%	(4)50.0%	8	(4)50.0%	(4)50.0%	(8)100.0%	-	(5)62.5%	(3)37.5%	(8)100.0%	-
4	4	(4)100.0%	-	-	(4)100.0%	4	(4)100.0%	-	(4)100.0%	-	(2)50.0%	(2)50.0%	(4)100.0%	-
Total	31	(21)67.7%	(10)32.3%	(21)67.7%	(10)32.3%	22	(15)68.2%	(7)31.8%	(21)95.5%	(1) 4.5%	(14)63.6%	(8)36.4%	(21)95.5%	(1) 4.5%

The objective stated for the Linguistics Program was to raise the reading achievement level of the children enrolled. Table X indicates the number and percent of children who showed improvement on the Woodcock Reading Mastery Test. Nearly 96% of the children in grades two through four improved in total reading. No gain (or loss) was reported for one child.

The Holt Basic Reading System was the informal reading measure agreed upon by the linguistics instructor and consultant. The purpose of the inventory is the estimation of a child's functional reading levels through an evaluation of the child's performance on a series of graded reading samples. The child is asked to read selections silently and orally and is then asked to respond to a series of questions designed to evaluate the child's ability to 1) recognize main ideas, 2) recall information, 3) make inferences based on this information, and 4) define contextually certain words or terms used in the selection.

The Linguistics Program's instructional staff reported the children in all four grades were pre and post tested on March 17 and June 16 respectively. Twenty-five children were administered the Silent Reading (SRI) Inventory; four children the Oral Reading Inventory (ORI). Only one child was administered both. Table XI summarizes the results of the testing when pre and post test scores are available.

TABLE XI

NUMBER OF READING LEVELS GAINED BY CHILDREN
ON THE HOLT BASIC READING SYSTEMS SILENT AND ORAL READING INVENTORIES
GRADES 1-4, LINGUISTICS PROGRAM-1975

Inventory	N	1 Level	2 Levels	3 Levels	4 Levels	No Gain	Total
SRI	25	(8)32.0%	(5)20.0%	(4)16.0%	(1)4.0%	(7)28.0%	(25)100.0%
ORI	4	(2)50.0%	(2)50.0%	- -	- -	- -	(4)100.0%

Seventy-two percent of the children tested improved their functional reading by at least one level at the end of the three-month period between testings as measured by the SRI, 40% by at least two levels, 20% by three, and 4% by four levels. Twenty-eight percent, however, show no gains in reading level as measured by the SRI. One-hundred percent of the children tested on the ORI improved at least one reading level, 50% improved two levels.

Conclusions

The Linguistics Program operated for four months at one school with one teacher, all of which allows for only tentative conclusions. Listed below are some "tentative" findings and conclusions:

1. The Department of Research and Development was successful through the use of the SRA Test of General Ability to determine language dominance of Latino background children in grades one through four.

2. The Latino children appear to be well-grounded in basic concepts when measured by the Boehm Test of Basic Skills in their language dominance.

3. Children of Latino background identified for this program in grades three and four had reached mastery on the Dolch Word List prior to entry into the program.

4. There is reason to be concerned about the reading gains made by the nine Latino children enrolled in first grade as measured on the Woodcock Reading Mastery Tests.

5. The twenty-two Latino children enrolled in the program in grades two through four, as a group, reached the overall objective of one month growth for one month in program in reading as measured by the Woodcock Reading Mastery Tests. Greater than normal growth was noted in the Letter Identification, Word Comprehension, and in the Word Attack subtests; and less than normal growth in the Word Identification and Passage Comprehension subtests.

DIAGNOSTIC-PRESCRIPTIVE READING PROGRAM

DIAGNOSTIC-PRESCRIPTIVE READING PROGRAM
1974-1975

Introduction

The 1974-1975 school year was the first year that the Title I Reading Program serviced children for an entire school year. During the 1973-1974 school year, the first year of this program in the Racine School District, the program began at the start of the spring semester. This program serviced approximately 100 children in four schools at grades three and four.

The Diagnostic-Prescriptive Reading Program operated throughout the 1974-1975 school year in nine elementary schools; six public schools, and three non-public schools. The six public schools in which the program operated for the entire school year were: (1) Stephen Bull, (2) Lincoln, (3) Jefferson, (4) Franklin, (5) Janes, and (6) Garfield. The three non-public schools were Holy Name, Holy Trinity, and St. Stanislaus. Two additional public elementary schools, Knapp and Winslow, began servicing children by means of the Diagnostic-Prescriptive Reading Program in the second semester of the 1974-1975 school year.

The 1974-1975 Title I Diagnostic-Prescriptive Reading Program, including programs at the Knapp and Winslow Schools, serviced approximately 600 children in grades one through six. The research design utilized in the evaluation of this program was a pre-post test design. Therefore, the focus of this report is on those groups of children who received both pre and post test measures. This number of children is considerably smaller than the total number of children serviced for several reasons. Limited testing was carried out for the first grade program participants because it was felt that measures that would adequately assess reading deficiencies at this level were not available. Children at all grade

levels were moved into and exited from the program as the need arose. This flexibility provided the opportunity for program staff to exit children from the program as goals were reached and to absorb children into the program at varying times throughout the year. The children entering the program at Knapp and Winslow Schools were tested for diagnostic rather than for evaluation purposes. Consequently, the results of testing for these groups is not contained in this report. Children in non-public schools serviced by this program do not participate in the standardized testing program of the Racine Unified School District #1. Therefore, no data regarding Metropolitan Achievement Test results were available for these children.

Each of the schools offering the Diagnostic-Prescriptive Reading Program was assigned an area within the school referred to as the Diagnostic-Prescriptive Center. Each center was staffed by a full-time Reading Teacher and from two to four full-time Teacher Aides, depending on the enrollment. The activities of the staff were supervised by a Coordinator. During the fall semester of the 1974-1975 school year the program operated without a Coordinator, as a qualified person to fill this position could not be found. A part-time Coordinator was appointed at the beginning of the spring semester.

Pre-service workshops were held for all staff members and roles were established. The role of the Coordinator was to supervise program staff, coordinate program operations, and provide in-service training on an on-going basis. The role of the Resource Teacher was to diagnose the needs of eligible students, prescribe appropriate learning experiences for remediation of identified needs, and evaluate the progress made by these students. The role of the Instructional Aide was to implement the prescriptions with students both at school and in the home under the direction of the Resource Teacher.

Students came to the center in small groups three times a week for approximately 45 minutes per visit. The center visits were scheduled in such a manner

that reading time was not interrupted and that class work missed was not confined to one subject matter area. Diagnostic-Prescriptive children met twice a week with an Instructional Aide and once per week with the Resource Teacher.

Process monitoring procedures were employed in order to gain insights into the degree of implementation the program had achieved over the course of the year. Both Diagnostic-Prescriptive Center activities and home visits were observed and these results analyzed. (These reports appear in Appendices C and D.)

The objective, in terms of expected growth in the various areas of reading skill, was the achievement of one month's growth for each month in the program. Original design plans were adjusted to include a study of a sample of the children to determine progress at the mid-year. (See Appendix B for a copy of the Diagnostic-Prescriptive Reading Program Interim Report.)

Presentation of Data and Interpretation of Results

WRAT AND SPACHE SUBTEST RESULTS GRADES TWO THROUGH SIX

The Wide Range Achievement Test - Reading Subtest, Level I and the Spache Diagnostic Reading Scales, Word Recognition Lists were administered to all second through sixth grade children participating in the Diagnostic-Prescriptive Reading Program in October, 1974 and June, 1975. (At post testing time only those children who had been administered the pretest were post tested.)

The Wide Range Achievement Test - Reading Subtest, Level I is designed to measure the ability to recognize and name letters and pronounce words. The Spache Diagnostic Reading Scales, Word Recognition Lists are designed to measure the skills of word recognition and analysis.

Table I shows the pre and post mean scores and their respective confidence intervals for children in grades two through six.

TABLE I

PRE AND POST WIDE RANGE ACHIEVEMENT TEST
READING SUBTEST RESULTS
GRADE EQUIVALENT MEANS AND CONFIDENCE INTERVALS
FOR TITLE I DIAGNOSTIC-PRESCRIPTIVE CHILDREN
GRADES TWO THROUGH SIX, 1974-75

Grade	N	Pretest–October, 1974 $\bar{X}$	95% C.I.	Post Test–June, 1975 $\bar{X}$	95% C.I.	Change
2	29	1.88	1.69 - 2.07	3.08	2.75 - 3.41	*
3	50	2.73	2.48 - 2.98	3.46	3.17 - 3.76	*
4	55	3.52	3.20 - 3.83	4.31	3.96 - 4.66	*
5	51	3.42	3.07 - 3.77	4.07	3.66 - 4.48	
6	29	4.14	3.60 - 4.67	5.04	4.36 - 5.73	

*Indicates significance at .05 level or beyond.

From Table I it can be seen that the mean grade equivalent scores for all grades increased from pre to post testing. For the second, third, and fourth grade groups this increase was statistically significant. For grades five and six the increase in mean grade equivalent scores did not achieve statistical significance. Both pre and post mean scores for the fifth grade group were lower than that of the fourth grade group.

The objective of one month's growth for each month of the program was examined by computing gain scores (in months) for the second through sixth grade groups. There were eight months between pre and post testing. Therefore, the criterion of eight months' growth was used to determine if the objective had been achieved. Table II shows the mean gain scores and confidence intervals for second through sixth grade children.

TABLE II

AVERAGE GAIN IN MONTHS (AND CONFIDENCE INTERVALS)
ON THE WIDE RANGE ACHIEVEMENT TEST-READING SUBTEST
FOR TITLE I DIAGNOSTIC-PRESCRIPTIVE CHILDREN
GRADES TWO THROUGH SIX
BETWEEN PRE AND POST TESTINGS, 1974-75

Grade	N	Average Gain in Months	95% C.I. of the Average Gain	Significance of Average Gain
2	29	12.0	9.5 - 14.5	**
3	50	7.4	5.8 - 8.9	*
4	55	7.9	6.4 - 9.5	*
5	51	6.5	4.8 - 8.2	*
6	29	9.1	6.1 - 12.0	*

-Criterion of 8 months' growth not met by the group.
*Criterion of 8 months' growth met by the group.
**Criterion of 8 months' growth exceeded by group.

Table II shows that at all grade levels the criterion of eight months' growth was achieved. In one instance, the first grade group, the confidence interval for the mean gain of 12 months is above eight months. This indicates that the growth achieved by this first grade group in the area of letter recognition and word attack skills not only met but exceeded the criterion.

Practical considerations served as the basis for the final analysis of the WRAT test results. A realistic approach directed toward evaluation of any compensatory programming for children with prior low levels of achievement would indicate that all children would not attain the criterion. On the other hand, some children could be expected to show levels of achievement beyond the criterion. An attempt was made to look at gains made by children according to

categories of gain based on the criterion of eight months' growth. The results of this analysis are reported in Table III. The criterion of eight months' growth is the mid-point of category 4, growth of 7-9 months. This range was established to take into account the effects that measurement error might have on the test results.

TABLE III

GROWTH OF INDIVIDUAL TITLE I DIAGNOSTIC-PRESCRIPTIVE CHILDREN
AS MEASURED ON THE WIDE RANGE ACHIEVEMENT TEST-READING SUBTEST, 1974-75

Grade	Total		No Growth or Decrease		Growth of 1-3 to 4-6 Months		Growth of* 7-9 Months		Growth of 10 to 14 Months		Growth of** 15 Months & Beyond	
	N	%	N	%	N	%	N	%	N	%	N	%
2	29	100.0%	0	0.0%	2 6.9%	6 20.7%	2	6.9%	8	27.6%	11	37.9%
3	50	100.0%	3	6.0%	9 18.0%	9 18.0%	11	22.0%	13	26.0%	5	10.0%
4	55	100.0%	5	9.1%	6 10.9%	13 23.6%	12	21.9%	13	23.6%	6	10.9%
5	51	100.0%	5	9.8%	15 29.4%	11 21.6%	6	11.8%	8	15.7%	6	11.8%
6	29	100.0%	3	10.3%	5 17.2%	6 20.7%	4	13.8%	4	13.8%	7	24.1%
Grades 2-6 Combined	214	100.0%	16	7.5%	37 17.3%	45 21.0%	35	16.4%	46	21.4%	35	16.4%

*Expected growth- 8 months.
**Twice the expected growth- 16 months.

From Table III it can be seen that the percentage of children at all grade levels who made no gains or showed a loss in months of growth was small. The range was from 0% at grade two to 10.3% at grade six. Combining categories 4 through 6, results in the percentages of children who attained and exceeded the criterion of eight months' growth. The most successful group was the second grade group where 72.4% of the children achieved and exceeded the criterion. The least successful group was the fifth grade group which showed 39.3% of the children met or exceeded the criterion. Overall, about 55% of the children tested met or exceeded the criterion of eight months' growth on this subtest. The percentages of children in the various grade groups who demonstrated some growth but did not achieve the criterion can be examined by combining categories 2 and 3, one to six months' of growth. Grade two shows the smallest percentage (27.6%) while grade five shows the largest percentage (51.0%). The results for the second grade group and the fifth grade group, the two most dissimilar grade groups, are consistent with the information reported in Tables I and II.

Similar analyses were carried out using the results of the Spache Diagnostic Reading Scales, Word Recognition Lists. Table I shows the pre and post mean grade equivalent scores and the 95% confidence intervals for these mean gains for grades two through six.

TABLE IV

PRE AND POST SPACHE DIAGNOSTIC READING SCALES
WORD RECOGNITION SUBTEST RESULTS
GRADE EQUIVALENT MEANS AND CONFIDENCE INTERVALS
FOR TITLE I DIAGNOSTIC-PRESCRIPTIVE CHILDREN
GRADES TWO THROUGH SIX, 1974-75

		Pretest-October, 1974		Post Test-June, 1975		
Grade	N	$\bar{X}$	95% C.I.	$\bar{X}$	95% C.I.	Change
2	29	1.90	1.69 - 2.11	3.30	2.93 - 3.67	*
3	50	3.06	2.71 - 3.41	4.08	3.75 - 4.41	*
4	56	4.03	3.70 - 4.35	4.92	4.62 - 5.22	*
5	50	3.96	3.60 - 4.33	4.83	4.51 - 5.15	*
6	30	4.85	4.41 - 5.29	5.52	5.12 - 5.92	

*Indicates significance at .05 level or beyond.

Table IV shows that at every grade level tested the post mean grade equivalent score was greater than the pre-score. At four of the five grade levels, this increased mean score was statistically significant. The sixth grade group was the sole exception.

The pre and post mean grade equivalent scores for the fifth grade on the Spache Word Lists showed the same pattern as the WRAT results for grade five (See Table I), in that both mean scores were lower for the fifth grade than the fourth grade group. In the case of the Spache results, however, the increase from pre to post testing for the fifth grade was statistically significant.

TABLE V

AVERAGE GAIN IN MONTHS (AND CONFIDENCE INTERVALS)
ON THE SPACHE DIAGNOSTIC READING SCALES, WORD RECOGNITION SUBTEST
FOR TITLE I DIAGNOSTIC-PRESCRIPTIVE CHILDREN
GRADES TWO THROUGH SIX
BETWEEN PRE AND POST TESTINGS, 1974-75

Grade	N	Average Gain in Months	95% C.I. of the Average Gain	Significance of Average Gain
2	29	14.1	11.4 - 16.7	**
3	50	10.2	8.0 - 12.3	**
4	56	8.9	6.7 - 11.1	*
5	50	8.7	7.0 - 10.4	*
6	30	6.7	4.2 - 9.3	*

-Criterion of 8 months' growth not met by the group.
*Criterion of 8 months' growth met by the group.
**Criterion of 8 months' growth exceeded by the group.

Similar findings appear for the gain scores for grades two through six. The criterion was eight months' growth. Table V shows that in all grade groups tested the criterion of eight months' growth was met and for the second and third grade groups the criterion was exceeded by these groups. The fifth grade group demonstrates a slightly lower gain in months than the fourth grade group. The group showing the smallest gain in months in this test was the sixth grade group. This finding in the sixth grade group may have been influenced by the fact that the ceiling on the Spache Word Recognition List 2 is 6.4 -- a good deal lower than the ceiling for the WRAT. Children in the sixth grade scoring at or above fifth grade level could have been limited by this ceiling effect. Table VI, which shows the six categories of growth, indicates that 40.1% of the sixth graders achieved a growth of seven months or beyond while 43.2% grew from one to six months. The sixth grade showed the greatest percentage of children (16.7%) in the no growth or decrease category.

TABLE VI

GROWTH OF INDIVIDUAL TITLE I DIAGNOSTIC-PRESCRIPTIVE CHILDREN
AS MEASURED ON THE SPACHE DIAGNOSTIC READING SCALES, WORD RECOGNITION SUBTEST, 1974-75

Grade	Total		No Growth or Decrease		Growth of 1-3 to 4-6 Months		Growth of* 7-9 Months		Growth of 10-14 Months		Growth of** 15 Months & Beyond	
	N	%	N	%	N	%	N	%	N	%	N	%
2	29	100.0%	0	0.0%	1 3.4%	2 6.9%	7	24.1%	8	27.7%	11	37.9%
3	50	100.0%	6	12.0%	3 6.0%	7 14.0%	6	12.0%	15	30.0%	13	26.0%
4	56	100.0%	5	8.9%	9 16.0%	8 14.3%	9	16.1%	14	25.0%	11	19.7%
5	50	100.0%	5	10.0%	4 8.0%	10 20.0%	9	18.0%	13	26.0%	9	18.0%
6	30	100.0%	5	16.7%	6 20.0%	7 23.2%	5	16.7%	2	6.7%	5	16.7%
Grades 2-6 Combined	215	100.0%	21	9.8%	23 10.7%	34 15.8%	36	16.7%	52	24.2%	49	22.8%

*Expected growth- 8 months.
**Twice the expected growth- 16 months.

An inspection of the various categories of growth of the remaining grade levels shows that the second grade group was the most successful in terms of growth. No child tested on the Spache Word Recognition Lists showed no growth or a decrease in growth, whereas 89.7% of these second graders met or exceeded the criterion of eight months' growth. Grades three, four, and five showed patterns of growth that were similar to each other and were reflected in percentages for the various categories for the combined groups. Grades two through six combined showed 63.6% of the children met or exceeded the criterion, 10.3% made no growth or showed a decrease, and 26.1% grew from one to six months.

In addition to the WRAT and Spache, reading skills of Diagnostic-Prescriptive children were measured by the Woodcock Reading Mastery Tests. The Woodcock Reading Mastery Tests is an individually administered diagnostic reading test appropriate for kindergarten through grade twelve. The battery consists of five subtests: (1) Letter Identification, (2) Word Identification, (3) Word Attack, (4) Word Comprehension, and (5) Passage Comprehension. A total reading score may be obtained by combining the results of the five subtests.

In November, 1974, the Woodcock Reading Mastery Tests, Form A were administered to all third grade children serviced by the Diagnostic-Prescriptive Program. The third graders remaining in the program throughout the year received the post test (Form B) in June, 1975. The third grade group was selected to pilot the instrument. If the results of the instrument were shown to be useful to the Resource Teacher, the testing was to be expanded to other grade levels, primarily for diagnostic purposes.

In February, 1975, the program Coordinator requested that Woodcock Reading Mastery Tests be administered to those children not tested in November. Of these children in grades one, two, four, five, and six, those who remained in the program at the year's end received the post test (Form B) in June, 1975.

The analysis of the Woodcock Reading Tests' results is presented separately for the third grade group in the following section. This is followed by a report of the findings for grades one, two, four, five, and six.

WOODCOCK READING MASTERY TESTS' RESULTS
GRADE THREE GROUP

Of the 70 third graders tested in November, 1975, 51 were post tested. The findings are based on these 51 children. Table VII shows the pretest and post test mean grade equivalent scores and the corresponding confidence intervals for this group.

TABLE VII

PRE AND POST WOODCOCK READING MASTERY TESTS
SUBTEST RESULTS
GRADE EQUIVALENT MEANS AND CONFIDENCE INTERVALS
FOR TITLE I DIAGNOSTIC-PRESCRIPTIVE CHILDREN
GRADE THREE, 1974-75

		Pretest-November, 1974		Post Test-January, 1975		
Subtest	N	$\bar{X}$	95% C.I.	$\bar{X}$	95% C.I.	Change
Word Identification	51	2.32	2.14 - 2.50	2.72	2.53 - 2.91	*
Word Attack	51	2.18	1.87 - 2.49	2.92	2.44 - 3.39	
Word Comprehension	51	2.03	1.84 - 2.21	2.53	2.28 - 2.78	*
Passage Comprehension	51	2.33	2.19 - 2.47	2.64	2.49 - 2.79	*

*Indicates significance at .05 level or beyond.

In order to conserve testing time it was decided to omit the administration of the Letter Identification Subtest for the post test. Therefore, no scores are reported for this subtest. A total reading score could not be calculated.

Table VII shows that post test mean scores were higher than pretest mean scores for all subtests administered to grade three children. Three of the four increased mean scores were statistically significantly higher. The one exception was for the Word Attack Subtest.

Table VIII shows the average gain scores and respective confidence intervals for the third grade group for the same four subtests listed in Table VII.

TABLE VIII

AVERAGE GAIN IN MONTHS (AND CONFIDENCE INTERVALS)
ON THE WOODCOCK READING MASTERY TESTS, BY SUBTEST
FOR TITLE I DIAGNOSTIC-PRESCRIPTIVE CHILDREN
GRADE THREE, 1974-75

Subtest	N	Average Gain in Months	95% C.I. of the Average Gain	Significance of Average Gain
Word Identification	51	4.0	3.1 - 4.8	-
Word Attack	51	7.4	4.7 - 10.1	*
Word Comprehension	51	5.0	3.7 - 6.4	-
Passage Comprehension	51	3.1	2.1 - 4.2	-

-Criterion of 6.5 months' growth not met by the group.
*Criterion of 6.5 months' growth met by the group.
**Criterion of 6.5 months' growth exceeded by the group.

The time between pre and post testings was 6.5 months, therefore, the criterion of growth that would indicate the attainment of the objective was 6.5 months. Table VIII shows that the objective was achieved only for the Word Attack Subtest. For the remaining three subtests, the average gain in months ranged from 3.1 months on the Passage Comprehension Subtest to 5.0 months on the Word Comprehension Subtest.

The average gains achieved over a 6.5 month span in the Word Comprehension and Passage Comprehension Subtests can be compared to the gains reported over a four-month period from pre to mid-testing. (See Table VI in Appendix B.) At the time of the mid-testing, a sample of 49 of the 70 third graders pretested had shown an average gain of 4.55 months. This gain met the criterion of four months' growth. At the time of the post testing, a sample of 51 of the 70 third graders pretested showed an average gain of 5.0 months. This gain did not meet the criterion of 6.5 months' growth. The average gain from March to June showed an increment of only .45 months for a 2.5 month period. A similar situation occurred for the two groups on the Passage Comprehension Subtest, although the criterion were not met for this subtest at either the mid-testing or the post testing points. The average gain in months for the 49 third graders tested at the mid-point was 2.67. The post testing gain was 3.1 indicating a gain of .43 months for the final 2.5 months of the program.

There are two possible reasons for this. First, it is possible that a selection bias was operating. If children who reached acceptable levels of performance were exited from the program before the post test was administered, it may be that the children who remained in the program until its termination were the least successful in their progress. It is felt that selection bias was not a factor here. Of the 70 children who received the subtest, 70.0% received the

mid-test and 72.9% received the post test. A comparison was made between the pretest mean scores of all children tested and that group of children who remained in the program until June for both the Word and Passage Comprehension Subtests. In all cases, these mean scores were almost identical and they did not differ significantly from each other.

The second possibility is that the progress children make over the period of one school year varies over the course of the year. It could be that these results are an indication that greater progress is made during the earlier months of program participation and that the amount of progress made tapers off as the school year draws to a close. It is felt that this possibility merits further study.

Table IX depicts the categories of growth for the Woodcock subtests over the 6.5 month period for the third grade group.

TABLE IX

GROWTH OF INDIVIDUAL TITLE I DIAGNOSTIC-PRESCRIPTIVE CHILDREN
AS MEASURED ON THE WOODCOCK READING MASTERY TESTS, ALL SUBTESTS
THIRD GRADE, 1974-75

Subtest	Total		No Growth or Decrease		Growth of 1-3 Months		Growth of 4-5 Months		Growth of* 6-7 Months		Growth of 8-11 Months		Growth of** 12 Months & Beyond	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Word Identification	51	100.0%	4	7.8%	23	45.1%	12	23.5%	6	11.8%	5	9.8%	1	2.0%
Word Attack	51	100.0%	12	23.5%	6	11.8%	8	15.7%	7	13.7%	5	9.8%	13	25.5%
Word Comprehension	51	100.0%	6	11.8%	15	29.4%	11	21.5%	6	11.8%	10	19.6%	3	5.9%
Passage Comprehension	51	100.0%	11	21.6%	18	35.3%	6	11.8%	9	17.6%	7	13.7%	0	0.0%

*Expected growth- 6.5 months.
**Twice the expected growth- 13 months.

Combining categories 4, 5, and 6 for the four subtests gives the percentage of children who met and surpassed the criterion of 6.5 months' growth. These percentages are by subtest: (1) Word Identification (23.6%), (2) Word Attack (49.0%), (3) Word Comprehension (37.3%), (4) Passage Comprehension (31.3%). The percentages of children making no growth or showing a loss in months of growth range from 7.8% on the Word Identification Subtest to 23.5% on the Word Attack Subtest. The percentages of children achieving some growth but not meeting the criterion range from 27.5% on the Word Attack Subtest to 68.6% on the Word Identification Subtest.

Based on the results of Table IX, a number of observations are presented. The smallest percentages of children at the two ends of the distribution were in the area of word identification skills. The majority of third graders (68.6%) made one to five months' gain. The largest percentages of children at the two ends of the distribution occurred on the Word Attack Subtest where approximately half of the children met or exceeded the criterion and approximately one-fourth of the children made no gains or decreased. Likewise, approximately one-fourth of the children made some growth not meeting the criterion. Considering the Word and Passage Comprehension Subtests, approximately twice as many children demonstrated no growth or a decrease in the Passage Comprehension Subtest in comparison to the Word Comprehension Subtest. The percentages of children demonstrating one to five months' growth and six months' growth and beyond are more consistent. The larger percentage of children in the lowest category for the Passage Comprehension Subtest is reflected in the percentage of children categorized in the top three categories combined. Six percent fewer children from this group met or exceeded the criterion for the Passage Comprehension Subtest when compared with the corresponding percentage for the Word Comprehension Subtest.

WOODCOCK READING MASTERY TESTS' RESULTS
GRADES ONE, TWO, FOUR, FIVE, AND SIX

As stated previously, the Diagnostic-Prescriptive children in grades one, two, four, five, and six received the Woodcock Reading Mastery Tests as a pre-test (Form A) in February, 1975 and as a post test (Form B) in June, 1975.

The number of first grade children who proceeded beyond the Letter Identification and the Word Identification Subtests was not sufficient to warrant analysis. The analysis was confined to the two subtests of Letter and Word Identification for the first-grade group. Table X shows these results.

TABLE X

PRE AND POST WOODCOCK READING MASTERY TESTS
LETTER IDENTIFICATION AND WORD IDENTIFICATION SUBTEST RESULTS
GRADE EQUIVALENT MEANS AND CONFIDENCE INTERVALS
FOR TITLE I DIAGNOSTIC-PRESCRIPTIVE CHILDREN
GRADE ONE, 1974-75

Subtest	N	Pretest-February, 1975 $\bar{X}$	95% C.I.	Post Test-June, 1975 $\bar{X}$	95% C.I.	Change
Letter Identification	30	1.66	1.47 - 1.85	1.80	1.66 - 1.94	
Word Identification	30	1.51	1.42 - 1.60	1.77	1.65 - 1.89	*

*Indicates significance at the .05 level or beyond.

Comparisons of pre and post mean grade equivalent scores showed that the Word Identification Subtest score showed a statistically significant increase from pre to post testing, whereas the increase in mean score for the Letter Identification Subtest was not statistically significant.

Children in grades two, four, five, and six received four of the five subtests. The Letter Identification Subtest was not administered in order to conserve testing time. A total reading score could not be calculated. Tables XI, XII, XIII, and XIV show these results for grades two, four, five, and six respectively.

TABLE XI

PRE AND POST WOODCOCK READING MASTERY TESTS' RESULTS
GRADE EQUIVALENT MEANS AND CONFIDENCE INTERVALS
FOR TITLE I DIAGNOSTIC-PRESCRIPTIVE CHILDREN
GRADE TWO, 1974-75

Subtest	N	Pretest-February, 1975 $\bar{X}$	95% C.I.	Post Test-June, 1975 $\bar{X}$	95% C.I.	Change
Word Identification	51	1.92	1.80 - 2.04	2.20	2.08 - 2.31	*
Word Attack	51	1.97	1.78 - 2.16	2.49	2.16 - 2.82	*
Word Comprehension	51	1.64	1.54 - 1.74	1.96	1.80 - 2.12	*
Passage Comprehension	51	1.88	1.76 - 2.00	2.21	2.08 - 2.34	*

*Indicates significance at the .05 level or beyond.

TABLE XII

PRE AND POST WOODCOCK READING MASTERY TESTS' RESULTS
GRADE EQUIVALENT MEANS AND CONFIDENCE INTERVALS
FOR TITLE I DIAGNOSTIC-PRESCRIPTIVE CHILDREN
GRADE FOUR, 1974-75

Subtest	N	Pretest-February, 1975 $\bar{X}$	95% C.I.	Post Test-June, 1975 $\bar{X}$	95% C.I.	Change
Word Identification	60	3.19	2.99 - 3.39	3.27	3.08 - 3.46	
Word Attack	57	2.88	2.55 - 3.21	3.82	3.20 - 4.43	
Word Comprehension	60	2.54	2.37 - 2.70	3.02	2.80 - 3.23	*
Passage Comprehension	60	2.97	2.78 - 3.16	3.31	3.13 - 3.48	

*Indicates significance at the .05 level or beyond.

TABLE XIII

PRE AND POST WOODCOCK READING MASTERY TESTS' RESULTS
GRADE EQUIVALENT MEANS AND CONFIDENCE INTERVALS
FOR TITLE I DIAGNOSTIC-PRESCRIPTIVE CHILDREN
GRADE FIVE, 1974-75

Subtest	N	Pretest-February, 1975 $\bar{X}$	95% C.I.	Post Test-June, 1975 $\bar{X}$	95% C.I.	Change
Word Identification	60	3.20	2.97 - 3.44	3.44	3.15 - 3.72	
Word Attack	60	3.18	2.51 - 3.84	4.18	3.35 - 5.01	
Word Comprehension	61	2.64	2.49 - 2.79	3.13	2.86 - 3.40	*
Passage Comprehension	61	3.08	2.85 - 3.31	3.48	3.24 - 3.72	

*Indicates significance at the .05 level or beyond.

TABLE XIV

PRE AND POST WOODCOCK READING MASTERY TESTS' RESULTS
GRADE EQUIVALENT MEANS AND CONFIDENCE INTERVALS
FOR TITLE I DIAGNOSTIC-PRESCRIPTIVE CHILDREN
GRADE SIX, 1974-75

Subtest	N	Pretest-February, 1975 $\bar{X}$	95% C.I.	Post Test-June, 1975 $\bar{X}$	95% C.I.	Change
Word Identification	37	3.75	3.36 - 4.14	3.90	3.51 - 4.29	
Word Attack	36	3.84	2.81 - 4.86	4.37	3.27 - 5.47	
Word Comprehension	38	3.07	2.76 - 3.38	4.05	3.53 - 4.57	*
Passage Comprehension	38	3.58	3.26 - 3.90	4.06	3.75 - 4.37	

*Indicates significance at the .05 level or beyond.

In all cases the post test mean grade equivalent scores were greater than the pretest scores. The results which reached statistical significance are described below.

For the second grade group, the post test mean grade equivalent scores for all four subtests were all statistically significantly greater than the corresponding pretest mean grade equivalent scores.

For the fourth, fifth, and sixth grade groups, the one statistically significant finding involved the Word Comprehension Subtest. The post test mean grade equivalent scores for the Word Comprehension Subtest was statistically significantly higher than the pretest mean score for these three grade groups.

The average gain scores and their confidence intervals were computed for the appropriate Woodcock subtests administered to the Diagnostic-Prescriptive children in grades one, two, four, five, and six. The time between pre and post testings was 3.5 months. Therefore, the criterion signifying that the objective of one month's growth for each month in program was 3.5 months. Tables XV through XIX show these results.

TABLE XV

AVERAGE GAIN IN MONTHS (AND CONFIDENCE INTERVALS)
ON THE WOODCOCK READING MASTERY TESTS, BY SUBTEST
FOR TITLE I DIAGNOSTIC-PRESCRIPTIVE CHILDREN
GRADE ONE, 1974-75

Subtest	N	Average Gain in Months	95% C.I. of the Average Gain	Significance of Average Gain
Letter Identification	30	1.4	1.6 - 2.7	-
Word Identification	30	2.7	1.8 - 3.5	*

-Criterion of 3.5 months' growth not met by the group.
*Criterion of 3.5 months' growth met by the group.
**Criterion of 3.5 months' growth exceeded by the group.

TABLE XVI

AVERAGE GAIN IN MONTHS (AND CONFIDENCE INTERVALS)
ON THE WOODCOCK READING MASTERY TESTS, BY SUBTEST
FOR TITLE I DIAGNOSTIC-PRESCRIPTIVE CHILDREN
GRADE TWO, 1974-75

Subtest	N	Average Gain in Months	95% C.I. of the Average Gain	Significance of Average Gain
Word Identification	51	2.8	2.1 - 3.5	*
Word Attack	51	5.2	2.9 - 7.5	*
Word Comprehension	51	3.2	2.2 - 4.2	*
Passage Comprehension	51	3.3	2.4 - 4.2	*

-Criterion of 3.5 months' growth not met by the group.
*Criterion of 3.5 months' growth met by the group.
**Criterion of 3.5 months' growth exceeded by the group.

TABLE XVII

AVERAGE GAIN IN MONTHS (AND CONFIDENCE INTERVALS)
ON THE WOODCOCK READING MASTERY TESTS, BY SUBTEST
FOR TITLE I DIAGNOSTIC-PRESCRIPTIVE CHILDREN
GRADE FOUR, 1974-75

Subtest	N	Average Gain in Months	95% C.I. of the Average Gain	Significance of Average Gain
Word Identification	60	0.8	-0.2 - 1.8	-
Word Attack	57	9.4	4.3 - 14.5	**
Word Comprehension	60	4.8	3.4 - 6.2	*
Passage Comprehension	60	3.4	1.9 - 4.8	*

-Criterion of 3.5 months' growth not met by the group.
*Criterion of 3.5 months' growth met by the group.
**Criterion of 3.5 months' growth exceeded by the group.

TABLE XVIII

AVERAGE GAIN IN MONTHS (AND CONFIDENCE INTERVALS)
ON THE WOODCOCK READING MASTERY TESTS, BY SUBTEST
FOR TITLE I DIAGNOSTIC-PRESCRIPTIVE CHILDREN
GRADE FIVE, 1974-75

Subtest	N	Average Gain in Months	95% C.I. of the Average Gain	Significance of Average Gain
Word Identification	60	2.3	1.2 - 3.4	-
Word Attack	60	10.0	5.1 - 14.9	**
Word Comprehension	61	4.9	3.1 - 6.7	*
Passage Comprehension	61	4.0	2.5 - 5.5	*

-Criterion of 3.5 months' growth not met by the group.
*Criterion of 3.5 months' growth met by the group.
**Criterion of 3.5 months' growth exceeded by the group.

TABLE XIX

AVERAGE GAIN IN MONTHS (AND CONFIDENCE INTERVALS)
ON THE WOODCOCK READING MASTERY TESTS, BY SUBTEST
FOR TITLE I DIAGNOSTIC-PRESCRIPTIVE CHILDREN
GRADE SIX, 1974-75

Subtest	N	Average Gain in Months	95% C.I. of the Average Gain	Significance of Average Gain
Word Identification	37	1.5	-0.3 - 3.3	-
Word Attack	36	5.4	0.0 - 10.7	*
Word Comprehension	38	9.8	6.2 - 13.4	**
Passage Comprehension	38	4.8	2.2 - 7.5	*

-Criterion of 3.5 months' growth not met by the group.
*Criterion of 3.5 months' growth met by the group.
**Criterion of 3.5 months' growth exceeded by the group

The results of the gain score analysis are described below by grade group.

Table XV shows that the first grade group reached the criterion of 3.5 months' growth on the one subtest of Word Identification. The average gain in months on the Letter Identification Subtest (1.4 months) for this group did not approach the criterion. The average gain made by the first grade group on the Word Identification Subtest was approximately twice as much as the average gain this group made on the Letter Identification Subtest.

As can be seen from Table XVI, the second grade group achieved the criterion of 3.5 months of growth for all four subtests. The average gain of 5.2 months on the Word Attack Subtest was the largest gain shown for this group, while the smallest gain was on the Word Identification Subtest (2.8 months).

Table XVII shows that for the fourth grade group the average gains for the subtests of Word Attack, Word Comprehension, and Passage Comprehension met the criterion of 3.5 months' growth. On the Word Attack Subtest, which showed the greatest gain in months (9.4), the criterion of 3.5 months of growth was not only met but exceeded. The average gain of 0.8 months on the Word Identification Subtest was the smallest gain made by the fourth grade group and it did not meet the criterion.

The fifth grade group showed a pattern of results similar to the fourth grade group. The results in Table XVIII show that the average gains made by the fifth graders reached the criterion on the same three subtests as the fourth graders; Word Attack, Word Comprehension, and Passage Comprehension. The fifth graders showed their largest gains (10.0 months) on the Word Attack Subtest. This gain not only met but exceeded the criterion of 3.5 months. The smallest gain and the only one that failed to reach the criterion was 2.3 months of growth on the Word Identification Subtest.

Table XIX contains the average gain scores for the sixth grade group. An inspection of this table reveals that the sixth graders achieved the criterion of 3.5 months' growth on the same three subtests as did the fourth and fifth grade groups. In the case of the sixth grade group, however, the subtest on which the children exceeded the criterion was Word Comprehension with an average gain of 9.8 months. The smallest gain made by the sixth graders was on the Word Identification Subtest (1.5 months) as was the case for both the fourth and fifth grade groups.

In the area of Word Identification the criterion of 3.5 months' growth was met only at grades one and two. The Word Attack Subtest was administered to four of the five grade groups. The average gains achieved by three of the four groups on the Word Attack Subtest were the greatest gains made. However, at grade six the largest gain made was on the Word Comprehension Subtest. In three of the four groups these gains exceeded the established criterion.

These findings, relative to the gains made by the various groups in the area of Word Identification, may reflect differences in the focus of remediation at the primary and intermediate elementary grades. In all cases where Word Attack Subtest results were available, the criterion was either achieved or exceeded. Table VIII, contained in the previous section, showed that the third grade group was also successful in meeting its criterion (6.5 months) on the Word Attack Subtest. The fact that four of the five grade levels (two, four, five, and six) that received the Word and Passage Comprehension Subtests met the criterion is encouraging. Reading comprehension skills have for many years been a source of concern for both reading teachers and classroom teachers alike.

Categories of growth were established to examine the distribution of children at the various grade levels for the appropriate subtests of the Woodcock Reading Mastery Tests. These results are reported in Tables XX through XXIV by subtest.

TABLE XX

GROWTH OF INDIVIDUAL TITLE I DIAGNOSTIC-PRESCRIPTIVE CHILDREN
AS MEASURED ON THE WOODCOCK READING MASTERY TESTS, LETTER IDENTIFICATION SUBTEST
GRADE ONE, 1974-75

Total		No Growth or Decrease		Growth of 1-2 Months		Growth of* 3-4 Months		Growth of 5-6 Months		Growth of** 7 Months & Beyond	
N	%	N	%	N	%	N	%	N	%	N	%
30	100.0%	8	26.7%	13	43.3%	4	13.3%	2	6.7%	3	10.0%

*Expected growth- 3.5 months.
**Twice the expected growth- 7 months.

TABLE XXI

GROWTH OF INDIVIDUAL TITLE I DIAGNOSTIC-PRESCRIPTIVE CHILDREN
AS MEASURED ON THE WOODCOCK READING MASTERY TESTS, WORD IDENTIFICATION SUBTEST, 1974-75

Grade	Total		No Growth or Decrease		Growth of 1-2 Months		Growth of* 3-4 Months		Growth of 5-6 Months		Growth of** 7 Months & Beyond	
	N	%	N	%	N	%	N	%	N	%	N	%
1	30	100.0%	5	16.7%	11	56.6%	5	16.7%	8	26.7%	1	3.3%
2	51	100.0%	6	11.8%	21	41.2%	12	23.5%	9	17.6%	3	5.9%
4	60	100.0%	26	43.3%	16	26.7%	9	15.0%	5	8.3%	4	6.7%
5	60	100.0%	22	36.7%	13	21.7%	11	18.3%	6	10.0%	8	13.3%
6	37	100.0%	14	37.8%	9	24.4%	6	16.2%	4	10.8%	4	10.8%
Grades 1,2,4,5,6 Combined	238	100.0%	73	30.6%	70	29.4%	43	18.2%	32	13.4%	20	8.4%

*Expected growth- 3.5 months.
**Twice the expected growth- 7 months.

TABLE XXII

GROWTH OF INDIVIDUAL TITLE I DIAGNOSTIC-PRESCRIPTIVE CHILDREN
AS MEASURED ON THE WOODCOCK READING MASTERY TESTS, WORD ATTACK SUBTEST, 1974-75

Grade	Total		No Growth or Decrease		Growth of 1-2 Months		Growth of* 3-4 Months		Growth of 5-6 Months		Growth of** 7 Months & Beyond	
	N	%	N	%	N	%	N	%	N	%	N	%
2	51	100.0%	15	29.4%	5	9.8%	8	15.7%	4	7.8%	19	37.3%
4	57	100.0%	19	33.3%	3	5.3%	7	12.3%	2	3.5%	26	45.6%
5	60	100.0%	16	26.7%	7	11.7%	5	8.3%	6	10.0%	26	43.3%
6	36	100.0%	17	47.1%	2	5.6%	2	5.6%	1	2.8%	14	38.9%
Grades 2,4,5,6 Combined	204	100.0%	67	32.8%	17	8.3%	22	10.8%	13	6.4%	85	41.7%

*Expected growth- 3.5 months.
**Twice the expected growth- 7 months.

TABLE XXIII

GROWTH OF INDIVIDUAL TITLE I DIAGNOSTIC-PRESCRIPTIVE CHILDREN
AS MEASURED ON THE WOODCOCK READING MASTERY TESTS, WORD COMPREHENSION SUBTEST, 1974-75

Grade	Total		No Growth or Decrease		Growth of 1-2 Months		Growth of* 3-4 Months		Growth of 5-6 Months		Growth of** 7 Months & Beyond	
	N	%	N	%	N	%	N	%	N	%	N	%
2	51	100.0%	16	31.3%	9	17.7%	6	11.8%	9	17.7%	11	21.5%
4	60	100.0%	12	20.0%	8	13.3%	10	16.7%	9	15.0%	21	35.0%
5	61	100.0%	13	21.3%	9	14.8%	8	13.1%	10	16.4%	21	34.4%
6	38	100.0%	4	10.5%	1	2.6%	10	26.3%	3	7.9%	20	52.7%
Grades 2,4,5,6 Combined	210	100.0%	45	21.4%	27	12.9%	34	16.2%	31	14.8%	73	34.7%

*Expected growth- 3.5 months.
**Twice the expected growth- 7 months.

TABLE XXIV

GROWTH OF INDIVIDUAL TITLE I DIAGNOSTIC-PRESCRIPTIVE CHILDREN
AS MEASURED ON THE WOODCOCK READING MASTERY TESTS, PASSAGE COMPREHENSION SUBTEST, 1974-75

Grade	Total		No Growth or Decrease		Growth of 1-2 Months		Growth of* 3-4 Months		Growth of 5-6 Months		Growth of** 7 Months & Beyond	
	N	%	N	%	N	%	N	%	N	%	N	%
2	51	100.0%	10	19.6%	14	27.5%	9	17.8%	11	21.6%	7	13.7%
4	60	100.0%	12	20.0%	9	15.0%	14	23.3%	10	16.7%	15	25.0%
5	61	100.0%	17	27.9%	5	8.2%	11	18.0%	11	18.0%	17	27.9%
6	38	100.0%	13	34.2%	3	7.9%	3	7.9%	4	10.5%	15	39.5%
Grades 2,4,5,6 Combined	210	100.0%	52	24.8%	31	14.8%	37	17.6%	36	17.1%	54	25.7%

*Expected growth- 3.5 months.
**Twice the expected growth- 7 months.

The results of the Letter Identification Subtest for the first grade group stand alone in Table XX as this was the only grade level receiving this subtest. From Table XX it can be seen that 30% of the first graders met or exceeded the criterion, while 43.3% made some gain but did not achieve criterion. The percentage showing no growth or a decrease in growth was 26.7%.

Table XXI depicts the results of the grade groups for the Word Identification Subtest. A comparison of combined percentages for the top three categories shows that the first and second grade groups were most successful in achieving the criterion of 3.5 months' growth with percentages of 46.7 and 47.0 respectively. These grade groups were also the most successful in that their categories of no growth or decrease contained the smallest percentages of children, 16.7% and 11.8% respectively. The fourth, fifth, and sixth grade groups were less successful in that the percentages of children in the top three categories combined were smaller and the percentages of children in the bottom category of no growth or decrease were larger. These percentages in the no growth category ranged from 36.7% at grade five to 43.3% at grade four. As a consequence of the magnitude of the percentages of grade four, five, and six children in the no growth category, the percentages of children at these grade levels achieving one to two months' growth were a good deal smaller than the corresponding percentages in this category at grades one and two. When the results were combined for the five grade groups, it can be seen that 40% of the children met or exceeded the criterion. Approximately 30% made either one to two months' growth, and 30% made no growth or decreased on word identification skills as measured by this instrument.

Table XXII shows that on the Word Attack Subtest greater percentages of children at all grade levels met or exceeded the criterion when these results are compared to the results of the Word Identification Subtest shown in Table XXI.

The smallest percentage of the combined top three categories was 47.3% at grade six while the largest percentage was 61.6% at grade five. The category of growth including one to two months did not vary extensively among the four grade levels. These percentages ranged from 5.3% at grade four to 11.7% at grade five. The percentages of children showing no growth or a decrease were somewhat large. These ranged from 26.7% at grade five to 47.1% at grade six. At all grade levels, the larger percentages are found at the extremes of the distribution. More children met or exceeded the criterion, but the majority of those who failed to achieve the criterion either made no growth or decreased in growth. The percentages for the four grade groups combined reflect the same pattern of findings at the individual grade levels.

A similar situation occurred on the Word Comprehension Subtest, as shown in Table XXIII. At all grade levels the three top categories combined showed that large percentages of children met or exceeded the criterion. The most impressive result was for the sixth grade where 86.9% of the children met or exceeded the criterion of 3.5 months' growth. As was found in the results for the Word Attack Subtest, the greater percentages of children not meeting criterion were found in the lowest category of no growth. These percentages ranged from 10.5% at sixth grade to 31.3% at second grade. The percentages for the four grades combined show a similar pattern.

The Passage Comprehension Subtest results, shown in Table XXIV, show percentages for all grade groups for the top three categories combined that range from 53.1% at grade two to 65.0% at grade four. Of those children not meeting criterion, the larger percentages again are found in the no growth or decrease in growth category with one exception. At grade two, 19.6% of the children are found in the category of no growth while 27.5% of the children showed some growth not meeting criterion.

In general, the results shown in Tables XXI through XXIV appear to indicate that the children studied appear to separate into two rather distinct groups. The largest group, ranging from 40% to approximately 66%, met or exceeded the established criterion. The next largest group, ranging from 21.4% to 32.8%, either made no growth or showed a decrease in growth. The groups of children showing some gains (one to two months) were generally small in comparison to the size of the first two groups. This finding may be an indication that the children serviced by this program either progress to criterion or they fail to make any progress at all.

DOLCH 220 WORD LIST

The Dolch 220 Word List was administered to all second through sixth grade children as a pretest in October, 1974. This measure of basic sight vocabulary skills was administered as part of the mid-testing battery in March, 1975 to a sample of 165 children in grades two through six in five of the participating schools.

Statistically significant increases in mean number of words correct from pre to mid-testing were found at grades two and three. (See Table III of Appendix B.) For the second and third grade groups categories of mastery were established in order to examine the progress made by these children from pre to mid-test. (See Table IV of Appendix B.) The information contained in this table indicated that the second and third graders as groups had made great strides in increasing their basic sight vocabulary skills.

An inspection of the pretest mean scores for grades four, five, and six showed that the lowest mastery level of the Dolch 220 Word List was 90% on the pretest for these three grade groups. The mid-test mean scores for the fourth, fifth, and sixth grade groups demonstrated mastery levels of at least 95%.

Based upon the findings of the Dolch 220 Word List results for this sample of Diagnostic-Prescriptive children, it was decided not to re-administer this instrument as part of the post testing battery.

Summary

The findings discussed in the previous sections of the report of the Title I Diagnostic-Prescriptive Program are summarized in Table XXV

TABLE XXV

SUMMARY OF FINDINGS FOR TITLE I DIAGNOSTIC-PRESCRIPTIVE READING PROGRAM BY READING SUBTEST BY GRADE LEVEL (2 THROUGH 6) IN RELATIONSHIP TO ESTABLISHED CRITERIA

Reading Subtests	Grade 2	3	4	5	6
Wide Range Achievement Test Reading Subtest, Level I	**	*	*	*	*
Spache Diagnostic Reading Scales Word Recognition Lists	**	**	*	*	*
Woodcock Reading Mastery Tests Word Identification Subtest	*	-	-	-	-
Woodcock Reading Mastery Tests Word Attack Subtest	*	*	**	**	*
Woodcock Reading Mastery Tests Word Comprehension Subtest	*	-	*	*	**
Woodcock Reading Mastery Tests Passage Comprehension Subtest	*	-	*	*	*

-Criterion not met by the group.
*Criterion met by the group.
**Criterion exceeded by the group.

Note. In all cases the criterion was one month's growth for each month in program.

In each case the criterion of Table XXV is the appropriate criterion established on the basis of time between pre and post tests.

Considering the findings across grade levels it can be seen from Table XXV that all grade groups (2-6) were successful in achieving the criterion of eight months' growth in the reading skills of letter and word recognition and word analysis as measured by the Wide Range Achievement Test, Reading Subtest, Level I and the Spache Diagnostic Reading Scales, Word Recognition Lists. In three cases the criterion of eight months' growth was exceeded. The second grade group exceeded the criterion on both the WRAT and the Spache measures and the third grade group exceeded the criterion on the Spache measures. These groups of children have attained the goal.

The criterion for the Word Identification Subtest of the Woodcock Reading Mastery Tests was achieved only at grade two. Therefore, the goal of increased skills in naming words as measured by the subtest was not met.

The criterion for the Word Attack Subtest of the Woodcock Reading Mastery Tests was achieved at all grade levels. At grades four and five this criterion of 3.5 months' growth was exceeded. In the area of application of phonic and structural analysis skills, the Diagnostic-Prescriptive children achieved success.

The results of the Word Comprehension Subtest of the Woodcock Reading Mastery Tests show that four of the five grade groups met the criterion. The third grade group with an average gain of 5.0 months did not meet the criterion of 6.5 months' growth. The sixth grade group with an average gain of 9.8 months exceeded the criterion of 3.5 months' growth. Taking into consideration the findings of the five grade groups studied, Diagnostic-Prescriptive children, in general, were successful in achieving the goal of increased knowledge of word meanings.

The results of the Passage Comprehension Subtest of the Woodcock Reading Mastery Tests are similar to those of the Word Comprehension Subtest results in that the third grade group was the only group which did not meet the criterion. The average gain of this group of 3.1 months did not approach the criterion of 6.5 months. All other grade groups met their criterion of 3.5 months and none of these groups exceeded the criterion. Based on the finding that four of the five grade groups met the criterion, it can be said that Diagnostic-Prescriptive children have been successful in increasing their reading comprehension skills.

Based upon the findings contained in Table XXV when the results of the various measures utilized are compared across grade levels, it can be seen that there are a number of similarities as well as differences. The areas of greatest success were for letter and word recognition and word attack skills as measured by the following instruments: (1) Wide Range Achievement Test, Reading Subtest, Level II; (2) Spache Diagnostic Reading Scales, Word Recognition Lists; and (3) Woodcock Reading Mastery Tests, Word Attack Subtest.

The next most successful areas of skill development for the Diagnostic-Prescriptive children were reading comprehension skills as measured by the two subtests of the Woodcock Reading Mastery Tests of Word Comprehension and Passage Comprehension.

The measure showing the least success for the Diagnostic-Prescriptive children was the Woodcock Reading Mastery Tests, Word Identification Subtest. This instrument measures word naming skills. The poor showing made by children on the Woodcock Reading Mastery Tests, Word Identification Subtest appears to be in direct opposition to the excellent results shown by two other instruments (WRAT and Spache Subtests) presumed to be measures of similar skills. This apparent discrepancy warrants further study.

The findings will now be discussed in terms of success attained by Diagnostic-Prescriptive children at each of the five grade levels which appear in Table XXV.

The second grade group achieved the greatest success in that this group met or exceeded the established criteria on every measure utilized in this study.

Children in grades four, five, and six attained similar success levels. Each of these grade groups attained their respective criteria on five of the six measures. In addition, each of these grade groups exceeded their respective criteria on one of the measures.

The grade three children achieved the least success in that this group met or exceeded the established criteria on three of the six measures.

Both the results by measures across the grade groups and the results within each grade group by measures used require interpretation beyond that which is contained in the previous discussion. The focus of this report has been based primarily on the results of tests of statistical significance. Additional explanation and interpretation of these findings are the responsibility of those individuals skilled in the area of reading instruction. It is recommended that the focus on reading skills for children at the various grade levels during the program year be studied in detail in relationship to the findings at these grade levels.

The final recommendation is based upon the findings pertaining to the large percentages of children at the extreme ends of the distributions showing categories of growth. The tendency of children to either make sufficient progress which ultimately resulted in attainment of the criterion or to fail to progress appears to merit further study. In particular, those children who demonstrated no growth or a decrease in growth over the program year should be of major concern.

A suggested procedure would be to design and conduct a research experiment aimed at studying these children intensely, applying treatments to be determined by experts in the field of reading and measuring the degree of success achieved. The interrelationships between the measurements obtained from a detailed study of these children and the measurements of their achievement as the result of the treatment applied, may provide insights which could assist program developers in meeting the needs of children who have thus far failed to make progress.

FOLLOW THROUGH

FOLLOW THROUGH

EDITOR'S NOTE

The Follow Through Study for the 1974-1975 school year was prepared separately. This data was presented to the Unified School District No. 1 Board of Education Committee of the Whole on Monday, April 7, 1975.

Copies of this report are available from the Department of Research and Development, Unified School District No. 1, Racine, Wisconsin.

APPENDICES

APPENDIX A

METROPOLITAN ACHIEVEMENT TEST DATA

All elementary school children in Racine Unified School District #1 participate in a District-wide standardized testing program. The Metropolitan Achievement Test is administered in the spring of each school year. The MAT batteries administered at each grade level are listed below.

Grade	MAT Battery and Form
K	MAT - Primer Battery, Form F
1	MAT - Primary I Battery, Form F
2	MAT - Primary II Battery, Form F
3	MAT - Elementary Battery, Form F
4	MAT - Elementary Battery, Form G
5	MAT - Intermediate Battery, Form F
6	MAT - Intermediate Battery, Form G

Test results from a standardized instrument of this nature do not play a major role in the evaluation of a compensatory program such as the Title I Diagnostic-Prescriptive Reading Program. Nevertheless, the study of achievement of groups of children at both the upper and lower ends of the distribution on a longitudinal basis can serve as an indicator of progress made in meeting the needs of children over long periods of time. Such information can be a useful tool to administrators in making long-range plans and establishing long-term goals within the School District.

For the reasons stated above, Metropolitan Achievement Test results of children participating in the Diagnostic-Prescriptive Reading Program were analyzed and are reported in this Appendix.

The MAT results of the spring, 1974 testing served as the pretest, while the MAT results of the spring, 1975 testing served as the post test. No pre-post results are reported for first grade participants. The results of the kindergarten MAT, Primer Battery administered to present first grade children in 1974

cannot be compared to the first grade MAT Primary I Battery administered to these children in 1975.

The MAT subtests which have the greatest relevance for the study of the progress of the Diagnostic-Prescriptive children are the Reading and Word Knowledge Subtests. The results of all subtests are reported, however. The progress of this group of children is a concern of Unified staff members of all subject areas (the total division of Instructional Services which encompasses administrators and staff of all subject areas).

Tables I through XVIII of this Appendix show the MAT results by subtest.

TABLE I

1973-74 AND 1974-75 METROPOLITAN ACHIEVEMENT TEST RESULTS, BY SUBTEST
GRADE EQUIVALENT MEANS (AND CONFIDENCE INTERVALS)
FOR TITLE I DIAGNOSTIC-PRESCRIPTIVE CHILDREN
GRADE TWO, 1974-75

Subtest	N	May, 1974 Testing $\bar{X}$	May, 1974 Testing 95% C.I.	May, 1975 Testing $\bar{X}$	May, 1975 Testing 95% C.I.	Change
Word Knowledge	36	1.77	1.64 - 1.90	2.54	2.39 - 2.69	*
Reading	35	1.59	1.51 - 1.66	2.31	2.11 - 2.51	*
Word Analysis	28	1.67	1.52 - 1.81	2.48	2.21 - 2.75	*
Mathematics	34	1.74	1.59 - 1.88	2.64	2.39 - 2.88	*

*Indicates significance at .05 level or beyond.

TABLE II

AVERAGE GAIN IN MONTHS (AND CONFIDENCE INTERVALS)
ON THE METROPOLITAN ACHIEVEMENT TEST, BY SUBTEST
FOR TITLE I DIAGNOSTIC-PRESCRIPTIVE CHILDREN
GRADE TWO
BETWEEN 1973-74 AND 1974-75 TESTINGS

Subtest	N	Average Gain in Months	95% C.I. of the Average Gain	Significance of Average Gain
Word Knowledge	36	7.7	5.9 - 9.4	*
Reading	35	7.2	5.2 - 9.3	*
Word Analysis	28	8.1	5.8 - 10.5	*
Mathematics	34	9.0	6.7 - 11.3	*

-Criterion of 8.5 months' growth not met by the group.
*Criterion of 8.5 months' growth met by the group.
**Criterion of 8.5 months' growth exceeded by the group.

TABLE III

1973-74 AND 1974-75 METROPOLITAN ACHIEVEMENT TEST RESULTS, BY SUBTEST
GRADE EQUIVALENT MEANS (AND CONFIDENCE INTERVALS)
FOR TITLE I DIAGNOSTIC-PRESCRIPTIVE CHILDREN
GRADE THREE, 1974-75

Subtest	N	May, 1974 Testing $\bar{X}$	May, 1974 Testing 95% C.I.	May, 1975 Testing $\bar{X}$	May, 1975 Testing 95% C.I.	Change
Word Knowledge	41	2.39	2.29 - 2.49	3.18	2.89 - 3.47	*
Reading	40	2.13	1.99 - 2.27	2.78	2.57 - 2.99	*
Spelling	41	2.42	2.23 - 2.61	2.66	2.41 - 2.90	
Math Computation	41	2.63	2.51 - 2.75	3.80	3.60 - 4.01	*
Math Concepts	41	2.73	2.52 - 2.94	3.26	2.94 - 3.58	*
Math Problem Solving	41	2.60	2.47 - 2.74	3.17	2.91 - 3.42	*

*Indicates significance at .05 level or beyond.

TABLE IV

AVERAGE GAIN IN MONTHS (AND CONFIDENCE INTERVALS)
ON THE METROPOLITAN ACHIEVEMENT TEST, BY SUBTEST
FOR TITLE I DIAGNOSTIC-PRESCRIPTIVE CHILDREN
GRADE THREE
BETWEEN 1973-74 AND 1974-75 TESTINGS

Subtest	N	Average Gain in Months	95% C.I. of the Average Gain	Significance of Average Gain
Word Knowledge	41	7.9	4.9 - 10.9	*
Reading	40	6.5	4.2 - 8.7	*
Spelling	41	2.4	0.4 - 4.4	-
Math Computation	41	11.7	9.5 - 13.9	**
Math Concepts	41	5.3	2.8 - 7.8	-
Math Problem Solving	41	5.6	3.3 - 8.0	-

-Criterion of 8.5 months' growth not met by the group.
*Criterion of 8.5 months' growth met by the group.
**Criterion of 8.5 months' growth exceeded by the group.

TABLE V

1973-74 AND 1974-75 METROPOLITAN ACHIEVEMENT TEST RESULTS, BY SUBTEST
GRADE EQUIVALENT MEANS (AND CONFIDENCE INTERVALS)
FOR TITLE I DIAGNOSTIC-PRESCRIPTIVE CHILDREN
GRADE FOUR, 1974-75

Subtest	N	May, 1974 Testing X	May, 1974 Testing 95% C.I.	May, 1975 Testing X	May, 1975 Testing 95% C.I.	Change
Word Knowledge	59	2.99	2.72 - 3.26	3.48	3.22 - 3.75	
Reading	59	2.50	2.35 - 2.66	2.99	2.73 - 3.25	*
Language	58	3.55	3.28 - 3.81	4.13	3.79 - 4.46	
Spelling	58	3.14	2.82 - 3.46	3.89	3.49 - 4.29	*
Math Computation	60	3.93	3.71 - 4.14	4.44	4.14 - 4.75	*
Math Concepts	59	3.27	3.08 - 3.46	3.80	3.55 - 4.06	*
Math Problem Solving	56	3.19	3.02 - 3.37	3.63	3.37 - 3.89	*

*Indicates significance at .05 level or beyond.

TABLE VI

AVERAGE GAIN IN MONTHS (AND CONFIDENCE INTERVALS)
ON THE METROPOLITAN ACHIEVEMENT TEST, BY SUBTEST
FOR TITLE I DIAGNOSTIC-PRESCRIPTIVE CHILDREN
GRADE FOUR
BETWEEN 1973-74 AND 1974-75 TESTINGS

Subtest	N	Average Gain in Months	95% C.I. of the Average Gain	Significance of Average Gain
Word Knowledge	59	4.9	1.9 - 7.9	-
Reading	59	4.9	2.4 - 7.4	-
Language	58	5.8	2.8 - 8.8	*
Spelling	58	7.5	4.4 - 10.6	*
Math Computation	60	5.1	2.6 - 7.7	-
Math Concepts	59	5.3	3.1 - 7.4	-
Math Problem Solving	56	4.4	2.4 - 6.4	-

-Criterion of 8.5 months' growth not met by the group.
*Criterion of 8.5 months' growth met by the group.
**Criterion of 8.5 months' growth exceeded by the group.

TABLE VII

1973-74 AND 1974-75 METROPOLITAN ACHIEVEMENT TEST RESULTS, BY SUBTEST
GRADE EQUIVALENT MEANS (AND CONFIDENCE INTERVALS)
FOR TITLE I DIAGNOSTIC-PRESCRIPTIVE CHILDREN
GRADE FIVE, 1974-75

Subtest	N	May, 1974 Testing X	May, 1974 Testing 95% C.I.	May, 1975 Testing X	May, 1975 Testing 95% C.I.	Change
Word Knowledge	35	2.94	2.68 - 3.19	3.44	3.19 - 3.70	*
Reading	36	2.62	2.45 - 2.79	3.53	3.18 - 3.87	*
Language	37	3.47	3.17 - 3.77	4.24	3.96 - 4.52	*
Spelling	32	3.53	2.96 - 4.09	4.60	4.32 - 4.88	*
Math Computation	37	4.02	3.63 - 4.41	5.25	4.94 - 5.55	*
Math Concepts	38	3.27	2.99 - 3.54	4.21	3.95 - 4.47	*
Math Problem Solving	37	3.40	3.09 - 3.71	4.13	3.86 - 4.40	*

*Indicates significance at .05 level or beyond.

TABLE VIII

AVERAGE GAIN IN MONTHS (AND CONFIDENCE INTERVALS)
ON THE METROPOLITAN ACHIEVEMENT TEST, BY SUBTEST
FOR TITLE I DIAGNOSTIC-PRESCRIPTIVE CHILDREN
GRADE FIVE
BETWEEN 1973-74 AND 1974-75 TESTINGS

Subtest	N	Average Gain in Months	95% C.I. of the Average Gain	Significance of Average Gain
Word Knowledge	35	5.0	2.6 - 7.5	*
Reading	36	9.1	5.4 - 12.8	*
Language	37	7.6	4.4 - 10.9	*
Spelling	32	10.8	5.5 - 16.0	*
Math Computation	37	12.2	8.3 - 16.1	*
Math Concepts	38	9.4	6.8 - 12.0	*
Math Problem Solving	37	7.3	3.9 - 10.7	*

-Criterion of 8.5 months' growth not met by the group.
*Criterion of 8.5 months' growth met by the group.
**Criterion of 8.5 months' growth exceeded by the group.

TABLE IX

1973-74 AND 1974-75 METROPOLITAN ACHIEVEMENT TEST RESULTS, BY SUBTEST
GRADE EQUIVALENT MEANS (AND CONFIDENCE INTERVALS)
FOR TITLE I DIAGNOSTIC-PRESCRIPTIVE CHILDREN
GRADE SIX, 1974-75

Subtest	N	May, 1974 Testing X	May, 1974 Testing 95% C.I.	May, 1975 Testing X	May, 1975 Testing 95% C.I.	Change
Word Knowledge	36	3.74	3.30 - 4.18	4.13	3.80 - 4.46	
Reading	36	3.60	3.32 - 3.88	3.78	3.42 - 4.13	
Language	34	4.48	4.11 - 4.86	5.17	4.72 - 5.62	
Spelling	35	4.53	4.23 - 4.84	5.65	5.25 - 6.05	*
Math Computation	33	5.57	5.20 - 5.94	6.20	5.66 - 6.75	
Math Concepts	33	4.45	4.17 - 4.74	4.91	4.54 - 5.28	
Math Problem Solving	32	4.05	3.73 - 4.37	4.67	4.22 - 5.12	

*Indicates significance at .05 level or beyond.

TABLE X

AVERAGE GAIN IN MONTHS (AND CONFIDENCE INTERVALS)
ON THE METROPOLITAN ACHIEVEMENT TEST, BY SUBTEST
FOR TITLE I DIAGNOSTIC-PRESCRIPTIVE CHILDREN
GRADE SIX
BETWEEN 1973-74 AND 1974-75 TESTINGS

Subtest	N	Average Gain in Months	95% C.I. of the Average Gain	Significance of Average Gain
Word Knowledge	36	3.9	-0.1 - 7.9	-
Reading	36	1.7	-3.1 - 6.6	-
Language	34	6.9	2.4 - 11.3	*
Spelling	35	11.2	6.8 - 15.5	*
Math Computation	33	6.3	0.7 - 12.0	*
Math Concepts	33	4.5	1.1 - 8.0	-
Math Problem Solving	32	6.2	2.2 - 10.2	*

-Criterion of 8.5 months' growth not met by the group.
*Criterion of 8.5 months' growth met by the group.
**Criterion of 8.5 months' growth exceeded by the group.

TABLE XI

GROWTH OF INDIVIDUAL TITLE I DIAGNOSTIC-PRESCRIPTIVE CHILDREN
AS MEASURED ON THE METROPOLITAN ACHIEVEMENT TEST, WORD KNOWLEDGE SUBTEST, 1974-75

Grade	Total		No Growth or Decrease		Growth of 1-4 to 5-7 Months		Growth of* 8-9 Months		Growth of 10-15 Months		Growth of** 16 Months & Beyond	
	N	%	N	%	N	%	N	%	N	%	N	%
2	36	100.0%	3	8.3%	7 19.4%	6 16.7%	5	13.9%	13	36.1%	2	5.6%
3	41	100.0%	9	22.0%	8 19.5%	9 22.0%	3	7.3%	4	9.7%	8	19.5%
4	59	100.0%	13	22.0%	15 25.3%	9 15.3%	7	11.9%	8	13.6%	7	11.9%
5	35	100.0%	9	25.7%	5 14.3%	8 22.9%	7	20.0%	2	5.7%	4	11.4%
6	36	100.0%	12	33.3%	7 19.4%	3 8.3%	4	11.1%	6	16.8%	4	11.1%
Grades 2-6 Combined	207	100.0%	46	22.3%	42 20.3%	35 16.9%	26	12.6%	33	15.9%	25	12.0%

*Expected growth- 8.5 months.
**Twice the expected growth- 17 months.

TABLE XII

GROWTH OF INDIVIDUAL TITLE I DIAGNOSTIC-PRESCRIPTIVE CHILDREN
AS MEASURED ON THE METROPOLITAN ACHIEVEMENT TEST, READING SUBTEST, 1974-75

Grade	Total		No Growth or Decrease		Growth of 1-4 to 5-7 Months		Growth of* 8-9 Months		Growth of 10-15 Months		Growth of** 16 Months & Beyond	
	N	%	N	%	N	%	N	%	N	%	N	%
2	35	100.0%	5	14.3%	6 17.1%	7 20.0%	5	14.3%	11	31.4%	1	2.9%
3	40	100.0%	6	15.0%	9 22.5%	5 12.5%	6	15.0%	12	30.0%	2	5.0%
4	59	100.0%	24	40.7%	7 11.9%	6 10.2%	5	8.5%	8	13.5%	9	15.2%
5	36	100.0%	9	25.0%	3 8.3%	3 8.3%	3	8.3%	8	22.2%	10	27.9%
6	36	100.0%	18	50.0%	3 8.3%	3 8.3%	1	2.8%	4	11.1%	7	19.4%
Grades 2-6 Combined	206	100.0%	62	30.1%	28 13.6%	24 11.6%	20	9.7%	43	20.9%	29	14.1%

*Expected growth- 8.5 months.
**Twice the expected growth- 17 months.

TABLE XIII

GROWTH OF INDIVIDUAL TITLE I DIAGNOSTIC-PRESCRIPTIVE CHILDREN
AS MEASURED ON THE METROPOLITAN ACHIEVEMENT TEST, WORD ANALYSIS SUBTEST, 1974-75

Grade	Total		No Growth or Decrease		Growth of 1-4 to 5-7 Months		Growth of* 8-9 Months		Growth of 10-15 Months		Growth of** 16 Months & Beyond	
	N	%	N	%	N	%	N	%	N	%	N	%
2	28	100.0%	3	10.7%	7 25	5 17.9%	2	7.1%	8	28.6%	3	10.7%

*Expected growth- 8.5 months.
**Twice the expected growth- 17 months.

TABLE XIV

GROWTH OF INDIVIDUAL TITLE I DIAGNOSTIC-PRESCRIPTIVE CHILDREN
AS MEASURED ON THE METROPOLITAN ACHIEVEMENT TEST, LANGUAGE SUBTEST, 1974-75

Grade	Total		No Growth or Decrease		Growth of 1-4 to 5-7 Months		Growth of* 8-9 Months		Growth of 10-15 Months		Growth of** 16 Months & Beyond	
	N	%	N	%	N	%	N	%	N	%	N	%
4	58	100.0%	21	36.2%	8 13.8%	4 6.9%	3	5.2%	9	15.5%	13	22.4%
5	37	100.0%	9	24.4%	2 5.4%	5 13.5%	5	13.5%	8	21.6%	8	21.6%
6	34	100.0%	9	26.5%	8 23.5%	5 14.7%	2	5.9%	4	11.8%	6	17.6%
Grades 4-6 Combined	129	100.0%	39	30.2%	18 14.0%	14 10.8%	10	7.8%	21	16.3%	27	20.9%

*Expected growth- 8.5 months.
**Twice the expected growth- 17 months.

TABLE XV

GROWTH OF INDIVIDUAL TITLE I DIAGNOSTIC-PRESCRIPTIVE CHILDREN
AS MEASURED ON THE METROPOLITAN ACHIEVEMENT TEST, SPELLING SUBTEST, 1974-75

Grade	Total		No Growth or Decrease		Growth of 1-4 to 5-7 Months		Growth of* 8-9 Months		Growth of 10-15 Months		Growth of** 16 Months & Beyond	
	N	%	N	%	N	%	N	%	N	%	N	%
3	41	100.0%	13	31.7%	14 34.2%	10 24.4%	2	4.9%	1	2.4%	1	2.4%
4	58	100.0%	14	24.2%	8 13.8%	12 20.6%	5	8.6%	10	17.3%	9	15.5%
5	32	100.0%	5	15.6%	2 6.3%	3 9.4%	1	3.1%	5	15.6%	16	50.0%
6	35	100.0%	5	14.3%	2 5.7%	4 11.4%	3	8.6%	8	22.9%	13	37.1%
Grades 3-6 Combined	166	100.0%	37	22.3%	26 15.7%	29 17.5%	11	6.6%	24	14.5%	39	23.4%

*Expected growth- 8.5 months.
**Twice the expected growth- 17 months.

TABLE XVI

GROWTH OF INDIVIDUAL TITLE I DIAGNOSTIC PRESCRIPTIVE CHILDREN
AS MEASURED ON THE METROPOLITAN ACHIEVEMENT TEST, MATH COMPUTATION SUBTEST, 1974-75

Grade	Total		No Growth or Decrease		Growth of 1-4 to 5-7 Months		Growth of* 8-9 Months		Growth of 10-15 Months		Growth of** 16 Months & Beyond	
	N	%	N	%	N	%	N	%	N	%	N	%
2	34	100.0%	5	14.7%	3 8.8%	6 17.6%	4	11.8%	11	32.4%	5	14.7%
3	41	100.0%	0	0.0%	6 14.6%	8 19.5%	5	12.2%	13	31.7%	9	22.0%
4	60	100.0%	21	35.0%	10 16.7%	4 6.6%	6	10.0%	10	16.7%	9	15.0%
5	37	100.0%	3	8.1%	2 5.4%	3 8.1%	5	13.5%	14	37.9%	10	27.0%
6	33	100.0%	9	27.3%	7 21.2%	4 12.1%	2	6.1%	3	9.1%	8	24.2%
Grades 2-6 Combined	205	100.0%	38	18.5%	28 13.7%	25 12.2%	22	10.7%	51	24.9%	41	20.0%

*Expected growth- 8.5 months.
**Twice the expected growth- 17 months.

TABLE XVII

GROWTH OF INDIVIDUAL TITLE I DIAGNOSTIC-PRESCRIPTIVE CHILDREN
AS MEASURED ON THE METROPOLITAN ACHIEVEMENT TEST, MATH CONCEPTS SUBTEST, 1974-75

Grade	Total		No Growth or Decrease		Growth of 1-4 to 5-7 Months		Growth of* 8-9 Months		Growth of 10-15 Months		Growth of** 16 Months & Beyond	
	N	%	N	%	N	%	N	%	N	%	N	%
3	41	100.0%	10	24.4%	8 19.5%	7 17.1%	3	7.3%	10	24.4%	3	7.3%
4	59	100.0%	16	27.1%	13 22.0%	8 13.6%	6	10.2%	9	15.3%	7	11.9%
5	38	100.0%	4	10.5%	4 10.5%	8 21.1%	2	5.3%	14	36.8%	6	15.8%
6	33	100.0%	11	33.3%	10 30.3%	4 12.1%	2	6.1%	1	3.0%	5	15.2%
Grades 3-6 Combined	171	100.0%	41	24.0%	35 20.5%	27 15.8%	13	7.6%	34	19.8%	21	12.3%

*Expected growth- 8.5 months.
**Twice the expected growth- 17 months.

TABLE XVIII

GROWTH OF INDIVIDUAL TITLE I DIAGNOSTIC-PRESCRIPTIVE CHILDREN
AS MEASURED ON THE METROPOLITAN ACHIEVEMENT TEST, MATH PROBLEM SOLVING SUBTEST, 1974-75

Grade	Total		No Growth or Decrease		Growth of 1-4 to 5-7 Months		Growth of* 8-9 Months		Growth of 10-15 Months		Growth of** 16 Months & Beyond	
	N	%	N	%	N	%	N	%	N	%	N	%
3	41	100.0%	10	24.4%	10 24.4%	5 12.2%	1	2.4%	11	26.8%	4	9.8%
4	56	100.0%	19	33.9%	9 16.1%	9 16.1%	5	8.9%	11	19.6%	3	5.4%
5	37	100.0%	5	13.5%	5 13.5%	10 27.0%	3	8.1%	8	21.7%	6	16.2%
6	32	100.0%	10	31.3%	4 12.5%	4 12.5%	3	9.4%	6	18.8%	5	15.5%
Grades 3-6 Combined	166	100.0%	44	26.5%	28 16.9%	28 16.9%	12	7.2%	36	21.7%	18	10.8%

*Expected growth- 8.5 months.
**Twice the expected growth- 17 months.

APPENDIX B

DIAGNOSTIC-PRESCRIPTIVE READING PROGRAM
INTERIM REPORT

Introduction

The children serviced by the Diagnostic-Prescriptive Reading Program during the 1974-1975 school year scored at or below the Racine Unified School District's 30th percentile on the Reading Subtests of the Metropolitan Achievement Test when administered in the spring of 1974. The students are enrolled in grades one through six at eight public schools in the District and three non-public schools in the District.

The program, due to staff recruitment problems, did not begin until the second semester of the 1974-1975 school year in two of the public schools. At each of the schools, a Diagnostic-Prescriptive Resource Center is set up. Each center has one full-time reading teacher and two full-time aides. To supervise and coordinate the efforts of these centers, one full-time coordinator was appointed at the beginning of the second semester. In addition to the center responsibilities, all staff members participate in weekly in-service workshops each Friday.

Pre-service workshops were also held for all staff and roles were established as follows: (a) The Diagnostic-Prescriptive Resource Teacher will administer formal and informal diagnostic tests and write prescriptions for individual students to be followed at school and home; (b) The Diagnostic-Prescriptive Resource Aide will implement these prescriptions with students in school and at home; (c) The Coordinator will supervise, coordinate, and provide in-service workshops weekly.

Students come individually or by two's to the Diagnostic Center three times a week for approximately forty-five minutes each time. Students' center

work is usually scheduled around their classroom reading time and scheduled so that each child does not miss the same subject more than once each week.

Each diagnostic teacher sends printed copies of the child's center schedule to him, his parents, classroom teachers, and coordinator. Each schedule includes the name of the student's diagnostic teacher and the aide with whom he works. The child then works once a week with the diagnostic teacher and two times a week with the aide. Also shown on the schedule is the time of the home visit or contact with each child's parent or guardian.

For the home visit the aide takes materials, games, and/or books as prescribed by the diagnostic teacher. The aide then demonstrates and explains this home prescription, gives suggested amounts of time intervals and expected outcomes. Then, the adult at home would implement this prescription with the child after school.

Center visits lasted forty-five minutes approximately and were held three times a week. Each child's program is designed, prescribed, and implemented with him in mind. Listed below is a general outline of the pattern which most visits took:

Center Visit-45 Minutes

Greeting, informal conversation.	2 - 3 min.
Dolch paragraphs and recording	2 - 3 min.
Skill drill.	5 - 8 min.
Vocabulary development	3 - 5 min.
Comprehension development.	10 -12 min.
Listening - Reading.	5 -10 min.
Evaluation - Motivation for visit and next visit . . .	2 - 3 min.
Total	45 min.

Evaluation Plans

The evaluation plan for the Title I Diagnostic-Prescriptive Reading Program, 1974-1975, specified that changes in participant's reading skills were to be evaluated by means of pre and post test measures. The instruments utilized in the measurement of behavioral changes are the Wide Range Achievement Test - Reading Subtest, Level I; and the Spache Diagnostic Reading Scales, Word Recognition Subtest to measure achievement in the area of vocabulary development and word attack skills; the Dolch 220 Word List to assess growth in basic sight vocabulary skills; and the Woodcock Reading Mastery Tests to measure change in the areas of letter identification, word identification, word attack, word comprehension and passage comprehension skills.

The evaluation plan also called for the post testing of forty-five children in grades four and five presently participating in the 1974-1975 Diagnostic-Prescriptive Program who participated in the program since its inception from January, 1974 through June, 1974 during the 1973-1974 school year. These children had been tested with the complete Spache Diagnostic Reading Scales as a pretest in February, 1974, and again as a post test in May, 1974. The plan for this group of children called for investigation of longitudinal behavioral changes over a span of three testing periods, February, 1974 to May, 1974; February, 1974 to May, 1975; and May, 1974 to May, 1975.

Finally, behavioral changes were also to be evaluated by means of the Metropolitan Achievement Tests - Reading Subtest. The Reading and Word Knowledge M.A.T. subtest scores are appropriate for evaluating behavioral changes in participants in present grades two through six. The M.A.T. Word Analysis Subtest is appropriate for present grade two, while the M.A.T. Language Arts Subtest is appropriate for present grades four through six. The M.A.T. pretest then was

administered as part of the District-wide testing program in May, 1974 and the post test will be administered in May, 1975.

In October, 1974 the Research and Development staff collected pre-data by administering the Wide Range Achievement Test - Reading Subtest, Level I; the Spache Diagnostic Reading Scales - Word Recognition Section; and the Dolch 220 Word List to all second through six graders enrolled in the Diagnostic-Prescriptive Program. The decision was made not to pretest the first grade participants because it was felt that these instruments were not appropriate for beginning first graders showing deficiencies in reading skills. At the time of pretesting, the Diagnostic-Prescriptive Program was operating in the following schools: Stephen Bull, Lincoln, Jefferson, Franklin, Janes, Garfield, Holy Name, Holy Trinity, and St. Stanislaus.

In November, 1975 the Research and Development staff administered the Woodcock Reading Mastery Tests to all third graders enrolled in the Diagnostic-Prescriptive Program. The Woodcock Reading Mastery Tests are a diagnostic and research tool which became available in 1974. The decision was made to administer the test as a pilot project to a sub-group of the total group of children in the Diagnostic-Prescriptive Program. The third grade group was chosen as the pilot group because it was felt that this group displayed the greatest need for additional diagnostic information. It was also judged by the Reading Consultant that the usefulness of the test could best be judged from a study of the third grade group.

In February, 1975 the Director of Title I and the Diagnostic-Prescriptive Reading Program Coordinator expressed interest in the collection of interim data from program participants for the purposes of making preliminary judgments concerning the degree of success attained by program participants as well as providing information that might prove useful for formative evaluation. A joint

decision was made by the Director of Title I and the Director of the Department of Research and Development to administer mid-year tests to a sample of Diagnostic-Prescriptive children. All interim testing was carried out in March, 1975.

The Wide Range Achievement Test - Reading Subtest, Level I and the Dolch 220 Word List were administered to a sample of second through sixth graders who had received the pretests. This testing was carried out in five schools: Janes, Lincoln, Garfield, Stephen Bull, and Franklin. A total of 165 children in grades two through six comprise the sample on which the analyses of the Wide Range Achievement Test - Reading Subtest, Level I and the Dolch 220 Word List are based.

Nineteen children are second graders, forty-one are third graders, fifty-three are fourth graders, twenty-six are fifth graders, and twenty-six are sixth graders. The time between pre and mid-year testing was five months.

The Woodcock Reading Mastery Tests, Word Comprehension and Passage Comprehension Subtests were administered to those third graders in the six public schools who had received the pretest in November, 1974. Of the fifty-seven children who received the pretest, forty-nine were available for interim testing. The results of the analysis of the Woodcock Reading Mastery Tests, then, are based upon a sample of forty-nine third graders who received both pre and mid-year tests. For this group the time between testings was four months.

In addition, the complete Spache Diagnostic Reading Scales were administered to those fourth and fifth grade children who were enrolled in the Diagnostic-Prescriptive Program in January, 1974, and who continue to be serviced by the program this year. Of the forty-five children identified as this group when the program begain in September, 1974, thirty-eight children were still in the program when interim testing was carried out in March, 1975. The results of this analysis are based on twenty-three children presently in grade four and fifteen children presently in grade five.

Presentation of Data and Interpretation of Results

VOCABULARY DEVELOPMENT AND WORD ATTACK SKILLS OF DIAGNOSTIC-PRESCRIPTIVE CHILDREN AS MEASURED BY THE WIDE RANGE ACHIEVEMENT TEST - READING SUBTEST, LEVEL I

In October, 1974 the Wide Range Achievement Test - Reading Subtest, Level I was administered to all second through sixth grade children participating in the Diagnostic-Prescriptive Reading Program as part of a pretest reading assessment battery. In March, 1975 the Wide Range Achievement Test - Reading Subtest, Level I was again administered to a sample of Diagnostic-Prescriptive children in the following schools: Janes, Lincoln, Garfield, Stephen Bull, and Franklin. A comparison of pre and mid-year testings showed a total of 165 children in grades two through six with both pre and mid-year scores. The analyses described below are based on this sample of 165 children.

The first analysis entailed the calculation of grade equivalent mean scores and confidence intervals for each grade (two through six) for pre and mid-year testings. Table I shows the grade equivalent means and confidence intervals for each grade.

TABLE I

PRE AND MID-YEAR WIDE RANGE ACHIEVEMENT TEST
READING SUBTEST RESULTS
GRADE EQUIVALENT MEANS AND CONFIDENCE INTERVALS
FOR DIAGNOSTIC-PRESCRIPTIVE CHILDREN
GRADES TWO THROUGH SIX, 1974-75

Grade	N	Pretest-October, 1974 $\bar{X}$	95% C.I.	Mid-Test-March, 1975 $\bar{X}$	95% C.I.	Change
2	19	1.94	1.76 - 2.11	2.75	2.43 - 3.08	*
3	41	2.67	2.47 - 2.88	3.45	3.11 - 3.80	*
4	53	3.47	3.19 - 3.74	4.06	3.71 - 4.40	
5	26	3.55	3.11 - 3.98	4.28	3.60 - 4.95	
6	26	4.03	3.17 - 4.89	4.63	3.87 - 5.40	

*Indicates significance at the .05 level or beyond.

An inspection of the confidence intervals for each grade on the two testings indicates that there is a statistically significant increase in grade equivalent mean scores for grades two and three from the October, 1974 to the March, 1975 testing periods. Although the grade equivalent means for grades four, five, and six increased over the five-month period, they did not reach the .05 level of statistical significance.

The second portion of the analysis consisted of computing the average gain in months on the Wide Range Achievement Test - Reading Subtest, Level I for each grade (two through six) as well as the 95% confidence intervals of the average gain.

The expected gain for Diagnostic-Prescriptive Program participants for the reading skills as assessed by the Wide Range Achievement Test - Reading Subtest, Level I is normal development, i.e., one month's growth for each month in the

program. The time between pre and mid-year testings was five months (October through March). To meet this expectation on a group basis, each group would be expected to achieve a minimum of five months' growth. Table II shows the average gain in months (and confidence intervals) for the 165 children in grades two through six from pretesting to mid-testing.

TABLE II

AVERAGE GAIN IN MONTHS (AND CONFIDENCE INTERVAIS)
ON THE WIDE RANGE ACHIEVEMENT TEST-READING SUBTEST
FOR DIAGNOSTIC-PRESCRIPTIVE CHILDREN
GRADES TWO THROUGH SIX, 1974-75
BETWEEN PRE AND MID-YEAR TESTINGS

Grade	N	Average Gain in Months	95% Confidence Interval of the Average Gain
2	19	8.16	5.90 - 10.42
3	41	7.78	5.61 - 9.95
4	53	5.89	3.59 - 8.19
5	26	7.31	3.84 - 10.77
6	26	6.04	3.53 - 8.54

From Table II it can be seen that at every grade level (two through six) the criterion of five months of growth has been met and surpassed. The average gains for the Wide Range Achievement Test - Reading Subtest, Level I range from 5.89 months of growth at grade four to 8.16 months of growth at grade two.

An inspection of the confidence intervals shows overlap among all grades. This indicates that there are no statistically significant differences among the five groups in average gain in months on the Wide Range Achievement Test - Reading Subtest, Level I.

In addition, it can be said that the average gain in grades two and three statistically significantly exceeded the expected growth (note: the confidence intervals do not include 5.0 months). Likewise, it can be said that the average gain in grades four, five, and six did not statistically significantly exceed the expected growth (note: the confidence intervals do include 5.0 months).

BASIC SIGHT VOCABULARY SKILLS OF DIAGNOSTIC-PRESCRIPTIVE CHILDREN AS MEASURED BY THE DOLCH 220 WORD LIST

In October, 1974 the Dolch 220 Word List was administered to all second through sixth grade children participating in the Diagnostic-Prescriptive Program, again as part of the pretest reading battery. In March, 1975 the Dolch 220 Word List was again administered to a sample of Diagnostic-Prescriptive children in the following schools: Janes, Lincoln, Garfield, Bull, and Franklin. A total of 165 children in grades two through six who received both pre and mid-year tests comprised the sample on which the analyses are based.

The Dolch 220 Word List consists of five lists: Pre-Primer, Primer, List 1, List 2, and List 3. The test was administered to every child by beginning with the Pre-Primer List and continuing on from one list to another until the child made ten consecutive errors. At that point, testing was discontinued and those words not administered were counted as errors. Results were reported by number of words correct for each list as well as total number of words correct from a possible 220 for diagnostic work with each child.

The first analysis consisted of calculating the average number of words correct and confidence intervals for each grade (two through six) for pre and mid-testing. Table III shows the average number of Dolch words correct (and confidence intervals) by grade for pre and mid-year testings.

TABLE III

PRE AND MID-YEAR DOLCH WORD (220) TEST RESULTS
AVERAGE NUMBER OF WORDS CORRECT (AND CONFIDENCE INTERVALS)
FOR DIAGNOSTIC-PRESCRIPTIVE CHILDREN
GRADES TWO THROUGH SIX, 1974-1975

Grade	N	Pretest-October,1974 $\bar{X}$	95% C.I.	Mid-Test-March,1975 $\bar{X}$	95% C.I.	Change
2	19	95	72 - 117	170	149 - 190	*
3	41	161	144 - 178	196	184 - 208	*
4	53	198	189 - 206	209	205 - 214	
5	26	206	199 - 212	212	208 - 216	
6	26	205	200 - 211	209	205 - 214	

*Indicates significance at the .05 level or beyond.

Inspection of the confidence intervals reveals a statistically significant increase in mean number of Dolch words correct from pre to mid-year testings for grades two and three. Although the average number of Dolch words correct increased from pre to mid-testing for grades four, five, and six, the increase did not reach the .05 level of significance for these grades.

It is important to note that the maximum score on the Dolch Word List is 220 words. In this School District, children who are making normal progress in the development of reading skills are expected to know all the words on the Dolch 220 Word List by the completion of the second grade. Consequently, the largest gains should occur in the lower grades. It is not surprising then, that the gains made in grades four, five, and six are not statistically significant.

A generally accepted criterion for mastery in reading skills as well as for other school-related competencies is 90% mastery. The average number of Dolch words correct for the fourth, fifth, and sixth grade groups meets this criterion

of 90% mastery (198 words correct) and surpasses it. The range is from 198 words correct (90% mastery) at grade four to 206 words correct (94% mastery) at grade five. On the mid-test the average number of Dolch words correct for the fourth and sixth grade groups reaches 95% mastery (209 words correct) while the fifth grade group reaches 96% mastery (212 words correct).

A second analysis of the Dolch 220 Word List Test results consisted of categorizing percent of mastery for the second and third grade groups on both pre and mid-year tests. Table IV shows the categories of mastery and the distributions of second and third grade Diagnostic-Prescriptive children for pre and mid-year Dolch 220 Word List Test results.

TABLE IV

PERCENT MASTERY OF DOLCH 220 WORD LIST
FOR DIAGNOSTIC-PRESCRIPTIVE CHILDREN, 1974-1975
GRADES TWO AND THREE FOR PRE AND MID-YEAR TESTINGS

	Grade 2				Grade 3			
	Pretest		Mid-Test		Pretest		Mid-Test	
	N	%	N	%	N	%	N	%
Below 10% Fewer than 22 words correct	1	5.4%	-	- %	1	2.4%	-	- %
10%-29% 22-65 words correct	5	26.3	-	-	2	4.9	1	2.4
30%-49% 66-109 words correct	5	26.3	3	15.8	5	12.2	1	2.4
50%-69% 110-153 words correct	4	21.0	3	15.8	6	14.6	3	7.3
70%-89% 154-197 words correct	4	21.0	6	31.6	15	36.6	5	12.3
90% or greater 198-220 words correct	-	-	7	36.8	12	29.3	31	75.6
Total	19	100.0%	19	100.0%	41	100.0%	41	100.0%

For the second grade group it can be seen from Table IV that on the pretest six children (31.7%) attained 29% mastery or less while on the mid-test no second graders were in this category. At the upper end of the second grade distribution, four children (21.0%) achieved mastery of 70% or better on the Dolch 220 Word List on the pretest while thirteen children (68.4%) achieved mastery of 70% or better on the mid-test.

A similar pattern is evident for the third grade group. On the pretest three third graders (7.3%) attained 29% mastery or less while on the mid-test one third grader (2.4%) was in this category. At the upper end of the third grade distribution, twenty-seven children (65.9%) achieved mastery of 70% or better on the Dolch 220 Word List pretest while thirty-six children (87.9%) achieved mastery of 70% or better on the mid-test.

In the second grade group no child achieved 90% mastery or greater on the Dolch 220 Word List pretest while seven children (36.8%) achieved 90% mastery or greater on the mid-test. In the third grade group twelve children (29.3%) achieved 90% mastery or greater on the pretest while thirty-one children (75.6%) achieved 90% mastery or greater on the mid-test.

READING COMPREHENSION SKILLS OF DIAGNOSTIC-PRESCRIPTIVE CHILDREN AS MEASURED BY THE WOODCOCK READING MASTERY TESTS - WORD COMPREHENSION AND PASSAGE COMPREHENSION SUBTESTS

In November, 1974 the Woodcock Reading Mastery Tests, Form A were administered to all third grade children enrolled in the Diagnostic-Prescriptive Reading Program. Seventy third graders were tested; thirteen non-public school children and fifty-seven public school children. The Woodcock Reading Mastery Tests is an individually administered diagnostic reading test appropriate for kindergarten through grade twelve. The complete battery consists of the five subtests of

Letter Identification, Word Identification, Word Attack, Word Comprehension, and Passage Comprehension Skills. In addition, a total reading score may be obtained by combining the results of the five subtests.

In March, 1975 the Woodcock Reading Mastery Tests - Word Comprehension and Passage Comprehension Subtests were administered to those public school third graders still enrolled in the Diagnostic-Prescriptive Reading Program. The Word Comprehension and Passage Comprehension Subtests were chosen to assess Diagnostic-Prescriptive children's changes in reading comprehension skills because a high priority is placed upon reading comprehension skills in the Diagnostic-Prescriptive Reading Program as well as throughout the entire School District. Pre and mid-year scores of forty-nine children were available for analysis.

The initial analysis of Woodcock Reading Mastery Tests results consisted of calculating grade equivalent mean scores and confidence intervals for the Word Comprehension and Passage Comprehension Subtests for the third grade group for the pre and mid-tests. Table V shows the grade equivalent means and confidence intervals for pre and mid-year testings on the Word Comprehension and Passage Comprehension Subtests for the forty-nine third graders.

TABLE V

PRE AND MID-YEAR WOODCOCK READING MASTERY TEST RESULTS
WORD COMPREHENSION AND PASSAGE COMPREHENSION SUBTESTS
GRADE EQUIVALENT MEANS AND CONFIDENCE INTERVALS
FOR THIRD GRADE DIAGNOSTIC-PRESCRIPTIVE CHILDREN, 1974-1975

Subtest	N	Pretest-November,1974 $\bar{X}$	95% C.I.	Mid-Test-March,1975 $\bar{X}$	95% C.I.	Change
Word Comprehension	49	1.88	1.74 - 2.01	2.33	2.13 - 2.54	*
Passage Comprehension	49	2.23	2.14 - 2.31	2.50	2.36 - 2.63	*

*Indicates significance at the .05 level or beyond.

Inspection of the confidence intervals from pre to mid-testings reveals no overlap for both Word Comprehension and Passage Comprehension. This means that there is a statistically significant increase in mean scores from pre to mid-tests for this third grade group in both word and passage comprehension skills as measured by the Woodcock Reading Mastery Tests.

A second analysis consisted of computing the average gain in months (and confidence intervals) on the Woodcock Reading Mastery Tests - Word Comprehension and Passage Comprehension Subtests for the third grade group from pre to mid-year testing. This information is shown in Table VI.

TABLE VI

AVERAGE GAIN IN MONTHS (AND CONFIDENCE INTERVALS)
ON THE WOODCOCK READING MASTERY TEST
WORD COMPREHENSION AND PASSAGE COMPREHENSION SUBTESTS
FOR THIRD GRADE DIAGNOSTIC-PRESCRIPTIVE CHILDREN
1974-1975, BETWEEN PRE AND MID-YEAR TESTINGS

Subtest	N	Average Gain in Months	95% Confidence Interval of the Average Gain
Word Comprehension	49	4.55	3.23 - 5.87
Passage Comprehension	49	2.67	1.87 - 3.48

The criterion of growth for Diagnostic-Prescriptive children's reading comprehension skills is normal growth, i.e., one month of growth for each month in the program. The time between pre and mid-year testings on the Woodcock Reading Mastery Tests was four months. Therefore, four months of growth would be necessary in order to achieve the criterion.

From Table VI it can be seen that the third grade group with an average gain of 4.55 months has met the criterion of four months' growth in the area of word comprehension skills as measured by the Word Comprehension Subtest of the Woodcock Reading Mastery Tests. In the area of passage comprehension, however, the third grade group's average gain of 2.67 months does not meet the criterion of four months' growth.

An inspection of the confidence intervals shows overlap between the two subtests. This indicates that there is no statistically significant difference between the growth in the two areas.

In addition, it can be said that the average gain in word comprehension did not statistically significantly exceed the expected growth (note: the confidence interval does include 4.0 months). Likewise, it can be said that the average gain in passage comprehension was statistically significantly below the expected growth (note: the confidence interval does not include 4.0 months).

The Woodcock Reading Mastery Tests have the added features of a standard score termed the achievement index and a mastery score based on the achievement index. The achievement index may be zero, a positive number, or a negative number. An achievement index of zero indicates that the child's achievement is average for his grade level. A negative achievement index indicates that the child's achievement is below average for his grade level, while a positive achievement index indicates that the child's achievement is above average for his grade level. The relative mastery score which is obtained from the achievement index indicates the predicted mastery when a child is given reading tasks that the average student at the child's grade level could perform with 90% mastery. The mastery scale ranges from 0 to 100% with an achievement index of 0 equal to 90% mastery.

The final analysis of the Woodcock Reading Mastery pre and mid-year tests was carried out using the mean achievement indices and corresponding mastery scores for the third grade group for the Word Comprehension and Passage Comprehension Subtests. Table VII shows the achievement index mean scores (and confidence intervals) as well as the corresponding mastery scores for the third grade group.

TABLE VII

PRE AND MID-YEAR WOODCOCK READING MASTERY TEST RESULTS
(WORD COMPREHENSION AND PASSAGE COMPREHENSION SUBTESTS)
ACHIEVEMENT INDEX MEAN SCORES, CONFIDENCE INTERVALS, AND MASTERY SCORES
FOR THIRD GRADE DIAGNOSTIC-PRESCRIPTIVE CHILDREN, 1974-1975

		Pretest			Mid-Test		
Subtest	N	Achievement Index	95% C.I.	Mastery Score	Achievement Index	95% C.I.	Mastery Score
Word Comprehension	49	-31	-36 - -25	23%	-22	-26 - -18	45%
Passage Comprehension	49	-23	-26 - -20	42%	-20	-24 - -17	50%

An inspection of the confidence intervals shows overlap from pre to mid-testings for both the Word Comprehension and Passage Comprehension Subtests. This indicates that there are no statistically significant differences in the achievement index scores from pre to mid-year tests on both the Word Comprehension and Passage Comprehension Subtests of the Woodcock Reading Mastery Tests.

From Table VII it can be seen that the third grade group progressed from a mastery score of 23% in the pretest to a mastery score of 45% on the mid-test in the area of word comprehension skills. In the area of passage comprehension skills the third grade group progressed from a pretest mastery score of 42% to a mid-test mastery score of 50%.

The mean achievement indices were examined in order to identify the relative degrees of deficiency of the third grade group in word comprehension and passage comprehension on both the pre and mid-year tests. Comparisons were based on a classification of reading achievement from the Woodcock Reading Test Manual presented in Table VIII below:

TABLE VIII

LEVELS OF READING ACHIEVEMENT[1]

Level of Achievement	Achievement Index	Relative Mastery[a]
Very Superior	+30 and above	100%[b]
Superior	+20 to +29	99%
Above Average	+10 to +19	97% to 98%
Average	-09 to +09	76% to 96%
Mildly Deficient	-19 to -10	51% to 75%
Moderately Deficient	-29 to -20	26% to 50%
Severely Deficient	-30 and below	25% or less

[a]Based on a reference value of 90% mastery at an achievement index of zero.
[b]Approximate value (more than 99.5%).

Using the classification categories of Table VIII to categorize the group achievement indices reported in Table VII one finds that the third grade group mean achievement index of -31 on the pretest would classify this group as severly deficient in word comprehension reading skills. An achievement index of -22 would place this same group in the moderately deficient category on the mid-test. In the area of passage comprehension skills, achievement indices of

[1]Adapted from Richard W. Woodcock, Woodcock Reading Mastery Tests Manual, American Guidance Service, Inc., Circle Pines, Minnesota, 1973, p.33.

-23 on the pretest and -20 on the mid-test would place this group in the moderately deficient category at both points.

INSTRUCTIONAL AND INDEPENDENT READING LEVELS OF DIAGNOSTIC-PRESCRIPTIVE CHILDREN AS MEASURED BY THE SPACHE DIAGNOSTIC READING SCALES

Longitudinal comparisons for present fourth and fifth graders who participated in the 1973-1974 Diagnostic-Prescriptive Reading Program are presented in this section of the report.

The evaluation design included plans for a longitudinal comparison of development of reading skills for those children who participated in the 1973-1974 Diagnostic-Prescriptive Program. These children had received the complete Spache Diagnostic Reading Scales in February, 1974 (when the program began) as a pretest and in May of 1974 as a post test. The original plan was to post test in May, 1975.

However, the Woodcock Reading Mastery Tests had been administered to these children in February of 1975 and would be administered again as an end-of-year post test. In order to avoid two rather long individual testing sessions at about the same time, the decision was made to gather the Spache data at the time of interim testing.

Of the eighty-nine children with Spache test scores in February and May of 1974, and serviced by the 1973-1974 Diagnostic-Prescriptive Program, forty-five continued to be serviced during the 1974-1975 school year. Thirty-eight of these children received the Spache Diagnostic Reading Scales in March of 1975. The results of this analysis are depicted in Table IX.

TABLE IX

SPACHE DIAGNOSTIC READING TEST SCORES IN GRADE EQUIVALENTS
THREE TESTINGS-2/74, 5/74, 3/75
PRESENT GRADE 4 AND 5 STUDENTS
ENROLLED IN TITLE I DIAGNOSTIC-PRESCRIPTIVE READING PROGRAM

Grade	N	Instructional Reading Level $\bar{X}$	Instructional Reading Level 95% C.I.	Independent Reading Level $\bar{X}$	Independent Reading Level 95% C.I.
Present Grade 4					
2/74	23	2.54	2.16 - 2.92	3.10	2.63 - 3.56
5/74	23	3.00	2.69 - 3.32	3.49	3.19 - 3.79
3/75	23	3.72(a)(b)	3.36 - 4.08	4.36(a)(b)	4.08 - 4.64
Present Grad 5					
2/74	15	3.06	2.65 - 3.48	3.49	3.17 - 3.82
5/74	15	3.23	2.71 - 3.75	3.79	3.35 - 4.23
3/75	15	3.99(c)	3.53 - 4.46	4.47(c)	4.07 - 4.87

(a)Present grade 4- significant change from 2/74 to 3/75.
(b)Present grade 4- significant change from 5/74 to 3/75.
(c)Present grade 5- significant change from 2/74 to 3/75.

There are three main reading capabilities measured by the Spache Diagnostic Reading Scales. They progress in order so that the first is considered hardest for the students to pass, the second less difficult, and the third the least difficult. The first reading level is the instructional level. The child reads graded paragraphs aloud and is asked questions about them. The number of errors both in oral reading and in comprehension determines whether the child passes or fails at that grade level. When the child fails a selection, the next selection is presented for him to read silently. The child must answer comprehension questions about this selection, and passes at each grade level when he responds

correctly to 60% of the questions. The highest selection the child passes in this manner, expressed in grade equivalent, determines the independent level. When a child fails the comprehension questions in silent reading, the tester then reads the next selections to the child until the point at which the child fails in comprehension. The highest point at which the child passes the comprehension questions when read to is called the potential level. If the child cannot pass at a higher level with each new mode of presentation, the potential level may be the same as the independent level, the independent level may be the same as the instructional level, or both higher levels may collapse to the instructional level.

These three measures represent an attempt to measure reading comprehension and give direction to the reading teacher regarding the appropriateness of certain instructional materials to be used with individual children. Data are reported for the instructional and independent levels of the Spache Diagnostic Reading Scales.

From Table IX it can be seen that in both the present fourth and fifth grade groups there were no statistically significant gains made in either the instructional reading level or the independent reading level from February to May of the 1973-1974 program year. Statistically significant changes in the present fourth grade occur between the February, 1974 and March, 1975, and the May, 1974 and March, 1975 testings for both the instructional and independent reading levels. For the present fifth grade group, statistically significant changes occur between the February, 1974 and the March, 1975 testing periods for these same variables.

It is important to note from Table IX that children in present grade four, who on the average were nine and one-half months deficient at the beginning of the program in grade three in February of 1974 (grade placement at time of testing

equals three and one-half) in instructional reading level, made twelve months' growth in less than eleven months in the program and school. This gain would not have been predicted for these children.

Likewise, it can be noted that children in present grade five, who on the average were fourteen and one-half months deficient at the beginning of the program in grade four in February of 1974 in instructional reading level, made nine and one-half months' growth in less than eleven months in the program and school.

The growth of these children in reading, as measured by the Spache Diagnostic Reading Scales, had been about one-half of a month per month in school prior to their involvement in the program, plus attending school.

Similar gains for both grades in independent reading level can be noted from Table IX.

Conclusions

The purpose of the interim testing was to provide preliminary indices of the success of the treatment over a relatively short period of time. Therefore, the conclusions must be considered tentative at this point in time.

In the area of word recognition skills as measured by the Wide Range Achievement Test - Reading Subtest, Level I and the Dolch 220 Word List statistically significant growth was achieved in grades two and three. The criterion of five months of growth as expected growth was met and surpassed at all grade levels tested on the Wide Range Achievement Test. The groups of children in grades two through six are progressing according to expectation and beyond expectations in the development of word recognition skills.

In the area of reading comprehension skills as measured by the Woodcock Reading Mastery Tests, the third grade pilot group improved significantly in both word and passage comprehension skills from pre to mid-testing. The criterion of four months of expected growth was met by this group for word comprehension skills but not for passage comprehension skills. At the time of pretesting the the third grade group showed a grade equivalent mean score for word comprehension three and one-half months below that of passage comprehension. Mid-test results showed a grade equivalent mean score for word comprehension 1.7 months below that of passage comprehension.

The progress of present fourth and fifth graders as a group is highly encouraging as measured longitudinally on the Spache Diagnostic Reading Scales.

These results seem to indicate that the school and program have been successful in their efforts to remediate the deficiencies of these children as a group.

APPENDIX C

OBSERVATION OF TITLE I DIAGNOSTIC-PRESCRIPTIVE CENTERS

In its continuing evaluation of the Diagnostic-Prescriptive Program, personnel of the Department of Research and Development made visits to all 11 D-P Centers. The individual session to be observed at each center was randomly selected. A guide for the observation was devised. The 11 centers were visited May 19-23, 1975.

Summary of Results

1. Do children arrive on time and ready to work?

	Number	Percent
Yes	8	72.7%
No	2	18.2
Not Observed	1	9.1
Total	11	100.0%

In approximately 73% of the sessions observed, the children either arrived promptly alone or were picked up by the aide. After some light conversation and a few transitional activities, they began work. In 18% of the sessions observed, the children did not arrive on time. After some deliberation, and several minutes into the session, the aide made the decision to collect them. In one instance, the aide commented that if the children do not arrive on time the office is contacted to determine whether the child is absent. If not absent, the classroom teacher is contacted. In one case the observer was delayed and could not observe the arrival activity.

2. What areas are covered, and approximately how much time is spent on each area?

The specific areas covered and time devoted to each area differed, of course, with each session. Some patterns, however, did emerge:

Areas Covered	Approximate Time Spent on Area In Minutes	Percent of Total Time	No. of Sessions in Which Area Was Covered
Passage Comprehension	13.7	45.7%	8
Word Attack	4.0	13.3	2
Word Recognition	10.0	33.3	2
Vowels	17.5	58.3	3
Sequencing	5.0	16.7	1
Story Writing	15.0	50.0	1
Dolch Words	12.5	41.7	2
Contractions	6.0	20.0	3
Vocabulary	6.5	21.7	3
Sentence Structure	7.5	25.0	2
Punctuation	5.0	16.7	1
Rhyming Words	5.0	16.7	1
Compound Words	5.0	16.7	1

The method used in teaching the above areas varied considerably from session to session. Level of difficulty and time spent on each area varied among the sessions. Seventy-three percent of the aides (eight of eleven) observed devoted on the average 46% of the time working on passage comprehension; three of the eleven aides devoted on the average 58% of the time during the session to teaching vowel sounds; two of the eleven aides devoted 42% of the time to Dolch Words; two of the eleven aides spent one-third of the time on word recognition, etc.

3. Is instruction individualized for each child?

	Number	Percent
Yes	11	100.0%
No	0	0.0
Total	11	100.0%

In all cases, instruction seemed individualized for each child. Prescription sheets were detailed, with frequent entries. When there was more than one child in the center, it was noted that the children all worked at different activities.

4. Does lesson appear appropriate for each child?

	Number	Percent
Yes	11	100.0%
No	0	0.0
Total	11	100.0%

The prescriptions for each child are based on individual diagnoses. As the child progresses, prescriptions are updated. None of the children observed seemed to be having difficulty with the material on which they were working.

5. Is the aide able to utilize and operate instructional media?

	Number	Percent
Yes	3	27.3%
No	0	0.0
Not Observed	8	72.7
Total	11	100.0%

Seventy-three percent of the aides were not observed using instructional media. The 27% who did use instructional media during the session seemed to utilize and operate the media well.

6. Is positive reinforcement used?

	Number	Percent
Yes	10	90.9%
No	1	9.1
Total	11	100.0%

In the 91% of the sessions where positive reinforcement was used, 60% of the time the reinforcement was verbal: "Yes", "That's fine", "Good work"! Forty percent of the time the aides were observed giving stickers, stars, etc., for work accomplished.

7. Does the aide encourage the child?

	Number	Percent
Yes	8	72.7%
No	3	27.3
Total	11	100.0%

In 73% of the sessions observed, the aide did encourage the child with comments such as the following: "I know you can do that, you did that one yesterday"; "Beautiful"; "You have no trouble with this"! Twenty-seven percent of the aides did not encourage the child during the observed session.

8. Does the aide communicate expectations to the child? (Does the child have a clear understanding of what's expected of him/her?)

	Number	Percent
Yes	11	100.0%
No	0	0.0
Total	11	100.0%

In all of the cases observed, the children seemed to have a very good understanding of the aide's expectations and displayed appropriate behavior.

9. Brief general impression summary.

All of the centers visited seemed very well organized. Rapport among D-P teacher and aides seemed excellent in most cases.

In all sessions observed, the aides referred to the prescription form as they worked with the children and several made comments on the form during the session as phases of the assignment were completed. Aides were successful in getting the children to cooperate and to respond. In approximately half of the centers visited, rapport between child and aide seemed adequate; in approximately one-third it could be considered excellent.

Communication among D-P teachers and their aides seemed excellent, although much of the exchange does not appear in their records.

Records

Monthly attendance record - school-home contact. (Examine most current record.)

Complete?

	Number	Percent
Yes	5	45.4%
No	3	27.3
Not Available	3	27.3
Total	11	100.0%

Up-to-date? (From beginning of month to day prior to visit.)

	Number	Percent
Yes	3	27.3%
No	5	45.4
Not Available	3	27.3
Total	11	100.0%

Forty-five percent of the monthly attendance records examined were complete; 27% were available, but incomplete; and 27% were not available (at home, could not be found). Of the five complete monthly attendance records, three were up-to-date.

For child observed indicate:

Number of times aide contacted classroom teacher.

Number of Contacts	Number & Percent of Aides	
	Number	Percent
0	4	36.3%
1	1	9.1
Not Available	3	27.3
Not Recorded	3	27.3
Total	11	100.0%

Number of times D-P teacher contacted classroom teacher.

Number of Contacts	Number & Percent of D-P Teachers	
	Number	Percent
0	5	45.4%
Not Available	3	27.3
Not Recorded	3	27.3
Total	11	100.0%

In 55% of the sessions observed, teacher contacts by aide and/or D-P teacher were either not recorded or the records were not available. Of the records examined, 80% indicated no classroom teacher contact by the aide and 100% of records examined indicated no classroom teacher contact by the D-P teacher.

Number of home contacts by D-P teacher.

Of the five records available for examination, all indicated none of the D-P teachers had made home contacts.

Number of home contacts by aide.

The number of home contacts made by aides varies a great deal: 80% of the five aides who kept records made at least one home visit in May preceding the observation; 40% made at least one phone call; 20% at least one written communication; and 40% at least one school visit. Eighty percent of the aides made at least one home contact; 60% made 26-35.

Total number of students with whom the aide works.

	Number of Children						
	12	13	14	15	16	No Record	Total
Number	1	1	2	4	1	2	11
Percent	9.1%	9.1%	18.2%	36.3%	9.1%	18.2%	100.0%

How and where are absences recorded?

	Unified Attendance Form	Mimeographed Form	Total
Number	6	5	11
Percent	54.5%	45.5%	100.0%

Prescription Form

(Examine most current record; may also examine previous records, if available.)

Prescriptions: List dates on which prescriptions were written, beginning with most recent prescription.

Dates Prescriptions Were Written	Number and Percent of Sessions					
	Prescription Recorded		No Prescription Recorded		Total	
	Number	Percent	Number	Percent	No.	%
5/75	6	54.6%	5	45.4%	11	100.0%
4/75	5	45.4	6	54.6	11	100.0
3/75	7	63.6	4	36.4	11	100.0
2/75	6	54.6	5	45.4	11	100.0
1/75	4	36.4	7	63.6	11	100.0
12/74	3	27.3	8	72.7	11	100.0
11/74	4	36.4	7	63.6	11	100.0
10/74	3	27.3	8	72.7	11	100.0

Approximately 55% of the prescription sheets examined had prescriptions dated as recently as May. At three centers, prescriptions examined were written more than once a month, but not necessarily every month. Twenty-seven percent of the records examined had prescriptions dating back to October, 1974. Prescription sheets at three centers had prescriptions listed for every month, October through May. (Two of the centers were opened in February.)

Aides' comments: Are aide comments written following each session?

	Number	Percent
Yes	9	81.8%
No	2	18.2
Total	11	100.0%

Eighty-two percent of the aides visited did have comments written following each session. In several instances comments were very detailed accounts of what transpired during the session.

Do aide comments include:

a. Percent of correct responses?

	Number	Percent
Yes	6	54.6%
No	5	45.4%
Total	11	100.0%

In slightly over half of the sessions, aides included percent of correct responses in the aides' comments.

b. Reactions of child to the task?

	Number	Percent
Yes	5	45.4%
No	6	54.6
Total	11	100.0%

In slightly less than half of the sessions, aides did record and/or comment on the child's reactions to the task at hand. Often these comments were quite detailed and lengthy.

c. Motivational behaviors effective with the child?

	Number	Percent
Yes	2	18.2%
No	9	81.8
Total	11	100.0%

Generally the aide comments did not indicate the motivational behaviors effective with the child, however, several aides and D-P teachers revealed that this type of information was noted by the D-P teacher as she observed the session or was communicated to the D-P teacher during informal sessions with the aides. It should be noted that the resource teacher in this program is in the center daily (with one exception) and has an opportunity to obtain and exchange information with the aides as needed.

Does the prescription sheet serve the purpose of:

a. Two-way communication between aide and D-P teacher?

	Number	Percent
Yes	6	54.6%
No	5	45.4
Total	11	100.0%

b. Two-way communication between aide or D-P teacher and parent?

	Number	Percent
Yes	3	27.3%
No	8	72.7
Total	11	100.0%

In 45% of the sessions observed, the prescription sheet did not serve as a two-way communication. (Please see narrative above.) Twenty-seven percent of the prescription sheets could be considered a two-way communication between D-P personnel and parent.

How often does the D-P teacher work individually with each child?

Frequency of Individual Work With Children by D-P Teacher	D-P Teachers Number	Percent
Once a week	1	9.1%
Once per two weeks	2	18.2
Once a month	1	9.1
Beginning of program	1	9.1
When aide is absent	2	18.2
Not often - as needed	3	27.2
None	1	9.1
Total	11	100.0%

Approximately 37% of the D-P teachers indicated they worked individually with each child at least once a month, 27% indicated they worked with individual children as needed.

How often does D-P teacher work with small groups of children?

Frequency of Work With Small Groups	Number & Percent of Teachers Number	Percent
Three times a week	1	9.1%
Once a week	2	18.2
Once a month	1	9.1
Occasionally	5	45.4
None	1	9.1
When aides are absent	1	9.1
Total	11	100.0%

About half of the teachers indicated they worked with small groups of children occasionally, 36% worked with small groups at least once a month.

How often does D-P teacher observe and assist aide working with an individual child?

Frequency Observing & Assisting Aide Working With Individual Child	Number & Percent of Teachers Number	Percent
Several times a day	3	27.3%
Weekly (with four children only)	1	9.1
Not often	1	9.1
When program began	1	9.1
As needed	5	45.4
Total	11	100.0%

Approximately half of the teachers indicated they observed and assisted the aides working with an individual child as often as their assistance was needed, 27% observed and assisted the aides several times a day.

APPENDIX D

OBSERVATION OF HOME VISITS CONDUCTED IN THE TITLE I DIAGNOSTIC-PRESCRIPTIVE PROGRAM

As part of its process monitoring plans for the Title I Diagnostic-Prescriptive Program, personnel of the Department of Research and Development observed five home visits with the instructional aides. The Diagnostic-Prescriptive aides were requested to submit a schedule of their home visits through June 20, 1975. Twenty-one out of the thirty aides from six out of eight public schools responded. One instructional aide was randomly selected from each of the six schools. Observation of one home visit could not be completed as the parent was not at home at the scheduled time and no other visit was scheduled by the aide. A guide for observation was devised. Home visits were observed June 4-June 9, 1975.

Summary of Results

1. Does aide demonstrate appropriate interpersonal relationships with parent?

	Number	Percent
Yes	5	100.0%
No	-	-
Total	5	100.0%

All five visits observed were handled in a very professional, yet friendly manner. The aides seemed to be genuinely interested in the children and anxious to discuss their progress and problems with the mother. In two of the five visits, the aides knew the mothers socially; however, they, too, were able to maintain a professional stance even when the conversation turned to interests the two shared that excluded the child. In all cases aides seemed to have established excellent rapport with the mothers.

2. Is the aide well received by parent?

	Number	Percent
Yes	5	100.0%
No	-	-
Total	5	100.0%

In all cases the parent seemed pleased to see the aide. Refreshments had been prepared for the occasion at two homes and coffee offered at a third. All but one parent was eager to discuss the child's progress and information concerning summer school and the need to continue to stress reading during the summer months. One parent listened intently, occasionally nodding approval or understanding, but did not speak during the session except to cordially greet the aide and observe, and to wish us a good summer. Another parent was in the process of packing for an extended trip that was to begin the following day and seemed a little dismayed that she had lost track of time and had not called to cancel the visit. The aide at this point indicated she was only planning to drop off some of the child's poetry and stories that had been in the group's magazine. The parent became immediately interested and involved in conversation with the aide. The session lasted forty minutes.

3. Does the aide communicate clearly the purpose of the visit and use of the materials?

	Number	Percent
Yes	5	100.0%
No	-	-
Total	5	100.0%

In all cases no homework assignments were made as it was nearly the end of the school year. Three of the five aides did take reading material and reading games and puzzles that the children could use during the summer and on summer

trips. All aides discussed the progress the child had made during the year and gave the parent information regarding summer school and the importance of continued emphasis on reading during the summer months.

4. Does the aide seek information in order to assist the child?

	Number	Percent
Yes	-	-
No	5	100.0%
Total	5	100.0%

None of the aides sought information in order to assist the child. However, the school year was coming to a close and the aides may not have needed any information beyond what they already had.

5. Is there two-way communication?

	Number	Percent
Yes	5	100.0%
No	-	-
Total	5	100.0%

In three of the five visits observed there was a good exchange of ideas and interested involvement in conversation about the child and the program. One mother, although rather quiet, did communicate concerns about the child. The aide was quite receptive and helpful in suggesting additional avenues for assistance. One mother who did not speak throughout the session (see question #2), seemed to communicate concerns, questions, approval through facial expressions to the aide who apparently correctly interpreted and responded to the seeming satisfaction of the parent.

6. Ascertain aide's understanding of information from the parent and how she plans to make use of it.

All but one mother verbalized a concern that the child "keep up" his reading during the summer. All aides responded by inviting the parent to take advantage of the summer program and encouraged them to request a library card for the child.

7. Brief summary of general impression.

Three of the five mothers visited were in various ways involved either with the Diagnostic-Prescriptive Program or other compensatory programs in the District and seemed to be in tune with the problems their children were having. Most (four) seemed to be quite knowledgeable about the program and spoke at some length with the aides about its objectives and complexities. All mothers visited appeared very interested in their child's progress. The aides indicated the mothers had all been extremely cooperative in encouraging and working with the children, and all but one attended school and program functions with some regularity.

Records

Home visit log. (Examine most current record. May also examine previous records, if available.)

Complete? (Child's name, parent's name, address, telephone number.)

	Number	Percent
Yes	2	40.0%
No	2	40.0
Not Applicable	1	20.0
Total	5	100.0%

Two of the five home visit logs examined were complete. Two did not indicate parent's name, address, or telephone number. Home visit logs were not used in one instance since the monthly attendance records had been instituted.

Date of last home visit?

Lapse of Time Since Last Home Visit	Number	Percent
One Week	2	50.0%
Two Weeks	2	50.0
Total	4	100.0%

No more than two weeks had lapsed since the last home visit. In two instances, only one. The aides indicated that all these parents were visited every week, generally. Two aides indicated that weekly visits didn't seem as necessary the last month of school. At one observation, home visit logs were not used since the monthly attendance records had been instituted.

Visit number?

The observed visits were numbered 19, 17, 3, 4. Two aides indicated they were relatively new to the program, but that they had visited the home at least twice monthly since they began work.

Is there a prescription stated?

	Number	Percent
Yes	5	100.0%
No	-	-
Total	5	100.0%

Prescription sheets and aides' comments were up-to-date in all cases. Prescriptions written were quite detailed.

Does aide understand reason for prescription?

	Number	Percent
Yes	5	100.0%
No	-	-
Total	5	100.0%

In all cases the aides seemed to be very much aware of the child's specific problems and the need for a given prescription. All were able to explain well how the treatment they gave the child corresponded to the prescription.

Do comments serve as means of communication to Diagnostic-Prescriptive teachers?

	Number	Percent
Yes	5	100.0%
No	-	-
Total	5	100.0%

In all cases the aides' comments were informative to the teachers and could be useful in communicating to the parent. Comments included the amount of work completed, the child's reaction to assignments (as communicated by parent), parent's reaction to assignment and to child's progress, the amount of cooperation received from the parent. Generally, aides' (and teachers') comments gave a very good account of the progress the child had made in the program.